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Time and Tide Wait for No Man

Dr. M. Mokete

It is six months since the last issue of our journal. Since then, we have been calling for articles from old and new contributors with promises where procrastination has been a thief of time. Hence, we are two issues of the journal behind schedule. Hopefully by 2013, which is now, all will fall into place for a better year.

The Millennium Development Goals of 2015 are reported to have fallen behind the expected outcome time in various countries in the world. Children still die, as well as mothers. Many people are still hungry and poor; HIV and AIDS has not been tamed yet; the effects of the disturbance of the ozone layer are taking their toll on human kind, all because the decision makers have not implemented their political wills on the millennium goals.

The disease burden has increased many times, more to the extent of being beyond the management and control of our countries and worst still, the least developed countries. Our aggressive armamentarium should include redoubled capacity building, both human and material, i.e. training all types of health personnel and revamping the infrastructures. Efforts at community health (both public health and family health) revamping are a sine qua non if we should have a better world.

Indeed time and tide wait for no man. The sun rises from the east and sets in the west with certain time parameters within which we have to operate. Shifting goal posts does not buy us time. Instead the deficit will be perennial. Let us make 2013 a better learning and sharing year for the betterment of mankind.

From the President's Pen

Colleagues, the year 2012 is drawing to a close. Another milestone is about to be erected once again in our individual lives and in the life of our association. It is customary for us at this time, both as individuals and as an association, to reflect soberly on non our humble selves and draw life's balance sheets in respect to what we have and have not achieved. Yes, it is customary for us at this time to redefine who we are, redefine our values and goals in life and vow ourselves to working towards the ultimate and achieving the purposes for our creation. We rejoice and perhaps congratulate ourselves erroneously when the balance sheets tilt favourably towards our successes. We lament on the other hand when our expectations fall short of what we hoped they would be. As we juggle our minds for causes of "claimed misfortunes" we blame and even curse. We lose the faith and by so doing satisfy the whims and caprices of the detractor. Colleague, in all things and at a time like this when we erect yet another important milestone of our lives. He has reasons for manifesting events of our lives the way they unfold. His love and mercy endures forever.

Two pillars of the LMA have been relocated to positions within the spiritual realm this 2012. I want colleagues to join me at is point as we painfully remember the departed souls of Drs C.T. Maitin and Titi Mohapi. It pleased God Almighty to call the souls of these two professionally and societally dedicated pillars of our Association to the peace and tranquil of His abode. These two souls and their deeds are still fresh in our memories. As indelible as they are, their contributions as senior members of our fraternity to the welfare of our Association cannot be eroded from our minds. They fought the good fight, they kept the faith and they finished the race in dignity and glory. We loved them, but God loves them most. May their souls rest in Peace.

Good health adds more years to life, so the saying goes. Colleagues, on a more positive note, I am highly elated at this point to report that our Association continues to remain in focus in its bid to champion the course of good health for the people of our nation as enshrined in our constitution. We surely will end the year 2012 and enter 2013 with the hope that our efforts to help shape and materialise the health dreams of our government and its people will pay off in the not very distant future. Thanks to the support our humble selves and your dedication to the ideals of our august Association. I had a promising discussion with Hon. Minister of Health, Dr Pinki Manamolela on activities and I have no reasons to doubt that the sky from now on will be the limit of how far we can go initiating and cementing the gains of the Association's planned agenda for the benefit of our people.

In respect to activities we managed to successfully undertake this year, allow me to say:

- We had a successful (AGM) annual meeting this year. The attendance this year showed much improvement over our experiences in previous years. There were useful scientific sessions that I believed benefited participants greatly.
- The LMA together with the delegates from the MOH, NMDS, LMDPC and LEBOHA paid successful visits to UOFS and Walter Sisulu medical schools. This was in line with our continued efforts to attract our young doctors to job assignments back home after successful completions of their studies.

The Associations programmes and activities are sponsored by the European Union through LEBOHA and USAID through EGPAF.

- As a communal activity, I also wish to mention the participation of the LMA in the recently held elections in the country. The election as known by all and sundry was very peaceful. The role the Association played by providing on the spot medical services on Election Day and media education programmes about peace, were recommendable and perfectly in line with duties and services we owe our dear country.
- Lastly, I record with joy that the learning and sharing programme has successfully resuscitated and is on-going. Thanks to the relentless effort and dedication to the executives.

All these said and despite my observed increase in members' participation in this year's AGM, I would still like to mention that members' participation and commitment to the association's activities still pose a challenge to the successful initiation and implementation of this activities. I entreat members to take this challenge seriously. It is vital to our future survival and relevance to the nation.

Members' professional development and excellence in practice is very close to my heart. (CPD) programmes and the use of points to be awarded by this programme as part of our Doctor's retention in the Register with LMDPC is very much welcome. Forward ever, and the Best is yet to come.

I wish you a merry Christmas and a Happy New Year.

Dr. C.K. Hoedoafia.

11.11.2012

Disposal Procedures of Expired and Unserviceable Pharmaceuticals in Lesotho

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Abstract:

Standard operating procedures for disposal of medicines as document should be available in all the health facilities. It helps to guide disposal of medicines and medical supplies when needed. Disposal of these item should be recorded and reports be kept in the facilities for later use. When followed disposal procedures will assist in avoiding unnecessary exposure of medicines by humans and animals that are not supposed to be exposed to such medicines. The objective of the study was to assess the availability of standard operating procedures for disposal of medicines, and how medicines are disposed in the health facilities.

The study was carried out in 145 clinics and data was collected, captured and analyzed. Tables were generated and results discussed.

The main findings showed that standard operating procedures are available in the health facilities even though some still did not have them. Despite the availability of standard operating procedures, many health facilities are still not carrying out disposal of medicines but send them to the hospitals, and District Health Management Teams for disposal. Disposal

methods used include: burn, burn and bury, dissolve and pour into the main drainage systems.

It is concluded that disposal of medicines are properly guided, however disposal is not carried out in all the health facilities. Disposal methods are known but sometimes not followed.

It is recommended that training of disposal of expired and unserviceable stock should be carried out and standard operating procedures should be available in all the health facilities.

Keywords: Medicine disposal, expired, unserviceable, standard operating procedures, incinerators.

Introduction:

Disposing of expired and unserviceable medicines and medical supplies should follow standard operating procedures set by the government of Lesotho. The standard operating procedure for disposal of medicines is a document that specifies procedures and methods of how to dispose different types of medicines. This document should be available in the health facility in order to guide disposal of various types of expired and unserviceable medicines and medical supplies. These

comprise liquid medicines, tablets, capsules, cytotoxic medicines, controlled medicines, while medical supplies are needles, gloves, syringes, bandages, sutures etc. Expired medicines are medicines whose predetermined dates beyond which the efficacy and safety of the medicine cannot be guaranteed, have passed and such medicines cannot be used for the treatment of any disease for the population.

Expired liquid medicines may start to allow for microbial contamination because the preservatives used would have run out of time especially in ophthalmic preparations. The integrity of both the active drug molecule and excipients may have been reduced. Expired medical supplies may have lost their sterility and may no longer be safe for use in the humans. Unserviceable stock means stock that cannot be used again even if stock has not yet expired. Therefore medicines and medical supplies that can no longer be used have to be disposed. Disposal methods include incineration, bury, burn and bury and some liquid medicines can be put down the main drains. According to Bound and Voulvoulis (2005) traces of medicines disposed through the drains have been found in water supply and in the UK water treatment is carried out to remove such medicines from water supply. While Kreisberg (2007) showed that in the USA water treatment does not include medicines and this has harmful effects on animal and humans. Disposal of expired and unserviceable stock should be done in a safe manner and a record of all the items

should be compiled, signed and be kept in the pharmacy. A report must be written, shared and a copy should be kept in the pharmacy for auditing purposes. Poor disposal of pharmaceutical may harm the community and the environment. Sometimes expired medicines are put aside and no disposal takes place and this makes the appearance of pharmacy untidy.

Statement of the problem: Expired and unserviceable medicines and medical supplies have to be disposed in a manner that will not harm the environment or human beings. Standard operating procedures (SOP) have to be in place in order to guide the disposal of these items, however, the presence of the SOP does not automatically mean that the disposal will be carried out accordingly, that is why it is important to establish the presence of SOP and to find out if it is used to guide disposal of pharmaceuticals and if not what happens to the expired medicines and medical supplies.

Objectives: The objectives of the study include identifying if there is a standard operating procedure for disposal of medicines and medical supplies, if they are followed and how medicines and medical supplies are disposed in the health facilities.

Methodology: Pharmacy stores of 145 health facilities comprising 14 Hospitals and 131 Health Centres were included in the Health Facility survey. There are 22 health facilities in the urban areas of

Lesotho, and 123 in the rural areas. This survey was carried out over a period of 21 days, after an approval from the ethics committee of the Ministry of Health and Social Welfare of the country.

Data collection for the pharmacy stores was done through interviews and making elaborate personal viewing of the facilities. Confidentiality forms (in English and Sesotho which is the local language spoken in Lesotho) were filled by the 12 researchers and the 145 interviewees.

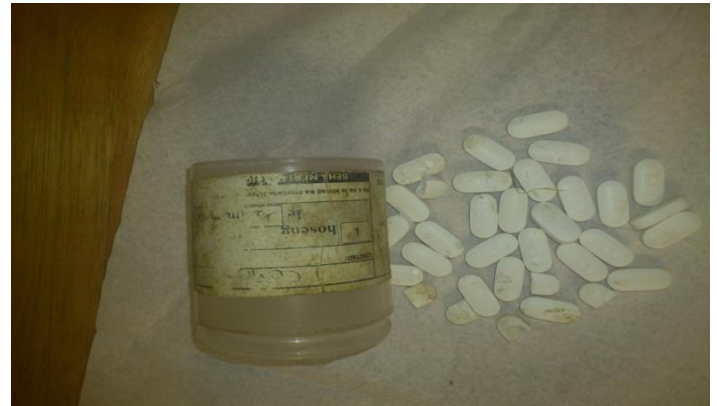
Data collection quality control was carried out by filling and signing data quality control forms at the clinics before leaving by the researchers and supervisors. Data abstraction analysis was carried out by data abstractors using SPSS version 19, and data entry and data cleaning rules were followed and quality control of data entry was carried out. Statistical tables were then generated and tables and figures were made and discussed

Limitation: Most facilities said that they return expired and unserviceable medicines to the supplier of mother hospital and these facilities were not part of the study, therefore information could not be verified.

Results: The results of the study show the example of serviceable medicines, presence of standard operating procedures for disposal of medicines and medical

supplies, methods of disposal and availability of functioning incinerators in the health facilities.

Picture 1: was taken from the medicine returned by the patient for pill counts and is an example of unserviceable stock.



Unserviceable stock as described above is medicines that cannot be given back to the patient for human consumption and the picture above shows such medicine.

Figure 1: Standard Operating Procedure for disposal of expired and unserviceable medicines

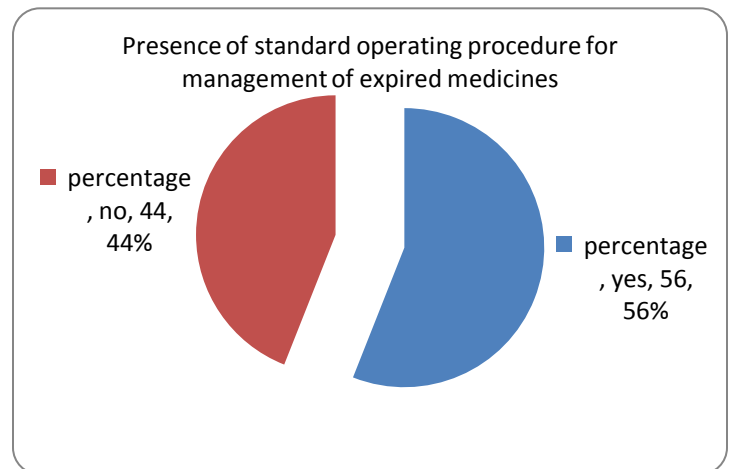


Figure above shows that 56 % of health facilities that had standard operating procedure for disposal of medicines, while 44% did not.

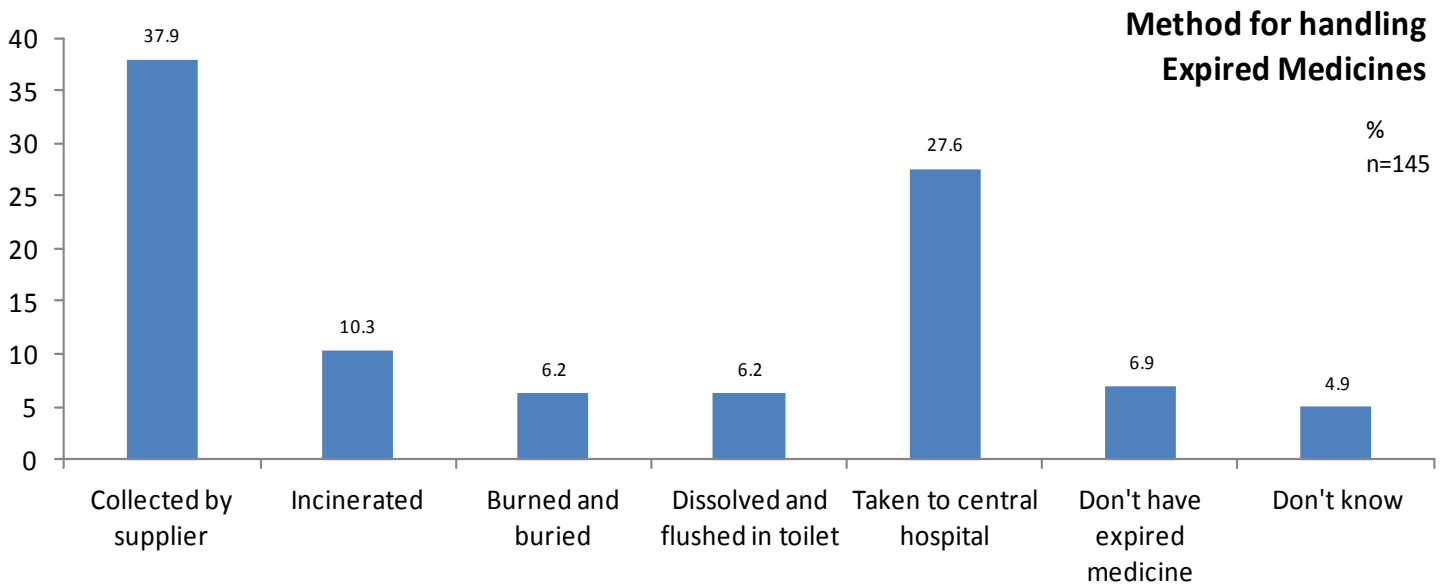


Figure 2: Handling of expired and unserviceable medicines and medical supplies

Most expired medicines are returned to either supplier which in this case is DHMT or central hospital that is supervising the clinic.

Presence of functioning incinerator in the health facilities

The results show that 34% of health facility have function incinerators while 66% of health facilities either have not incinerators at all or they have some but they are not function hence cannot be relied upon for disposal of expired and unserviceable stock.

Discussion

Disposal of medicines should be governed by the standard operating procedure (SOP) which is a document that is available in Lesotho and it specifies ways in which expired and unserviceable medicines and medical supplies should be disposed. First

expired and unserviceable stock should be collected and packed and marked accordingly and be sent to the mother hospital for disposal and there is also SOP for that. The SOP should be displayed on the wall of the pharmacy as a reminder and be strictly followed. More than half of the facilities (56%) visited had the relevant SOP as a guide for disposal, while about 44% of them did not have. This means that they can handle disposal of these items anyhow.

The actual handling of expired and unserviceable stock in the clinic differs from clinic to clinic, which may be due to lack of SOP. Some clinics (66%) return stock to either District Health Medical Team offices or to mother hospital while the rest of the clinics burn in open space, incinerate, or dissolve and flash through the toilet or main drainage system. Flashing

medicines in the toilet or main drainage system is not recommended because according to Braund *et al.*, (2005) showed that medicines can be found in significant amount in drinking water and consequences depend on the nature of medicines, contraceptives will lower pregnancy rate, antibiotics will be available in suboptimal levels in water and will sensitize bacteria which will in turn develop resistance. Antiretroviral drugs should not be disposed through the main drainage system because same effect may happen, especially on patients who have HIV but are not yet on treatment.

According to Kreisberg (2007) medicines may have certain effects on marine, animals and humans such as growth retardation in children and embryonic changes. For example it was found that Fluoxetine enhances the release of ovary-stimulating hormones in crayfish (Kulkarni G. 2007). While Selective Serotonin Reuptake Inhibitors may elicit aggressive behavior in lobsters, causing subordinates to engage in fighting against the dominant member, and reducing the propensity to retreat (Huber, et al 1997). What is more striking is the cost of wastage of medicines through expiry and un-use, posing a question of how much medicines should be given to patients and for how long, the cost of medicines

themselves, and the cost of disposal and who should bear that cost (Kreisberg, 2007).

Studies carried out in the UK showed levels of many commonly used medicines in water, the medicines were disposed from the homes of patient, and this was found to affect marine life and environment (Bound J. P., and Voulvoulis N., 2005). Medicines have differing characteristics, some medicines become inactive metabolites, while other become active metabolites, and there are those that remain the same after expiry, or use and when these substance enter the environment or water they cause unknown damage. It is important especially in Lesotho where the country worries more about the availability of medicines, not the effects of medicines on the human and environment. This leads to excessive availability of medicines on the streets including antibiotics and other prescription medicines.

In some clinics it was reported that staff did not know how to dispose of these medicines and medical supplies which means that training of health personnel should be carried out. In other clinics, there are some that burn and bury them which is a preferred method in our case for those medicines that can be burned but for those medicines that burning is not an option like liquids, landfill should be used as a method of disposal where a pit will be made and liquid poured inside and soil is used to cover the liquid. Landfill should be done in a place that is safe,

away from agricultural products and also away from rivers and dams. Pits can be made at the sites and be used for burning and burying of medicines. This is easier to make and cheaper, however care should be taken to look after such pits until they are full. Incinerator still remains the preferred method for those medicines that can be burned. Therefore is important for clinics to have functioning incinerators for proper disposal of expired medicines and medical supplies.

Unserviceable medicines are those unused medicines returned from a patient and their disposal should follow the same methods as expired medicines. These medicines are mostly in the custody of patients and may be disposed from the patients' homes or may be returned to the health facility (Kreisberg 2007). Currently, it is only antiretroviral medicines that are returned to the health facilities for pill counts. This means that medicines used in the treatment of other diseases are still kept in the homes of the patient and if not finished, or if the patient dies, these medicines still remain in the custody of public, and some families may opt to return the medicines to the facility, or dispose or keep them according to how they decide. There has never been a time for recall of any medicines in order to dispose them appropriately in Lesotho.

Conclusion

It is concluded that procedure to dispose expired and unserviceable stock are available in Lesotho, but their availability is in some clinics but not in all the clinics. The use of the SOP is also limited as some of the medicines are disposed in a manner that may harm humans through unnecessary and unintentional exposure, and environment.

Recommendation:

- It is recommended that there should be another study to test tap water in Lesotho for the presence and levels of medicines and ARV's should be included in the study.
- Re –educate the health professional on disposal of medicines and other supplies.
- Include medicines in the disposal of other biohazards
- Encourage patients to return unused medicines to the health facilities for proper disposal.

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Importance of interventional intense supervision and regular mentoring of pharmacy assistants on inventory management, good dispensing practices and proper reporting of antiretroviral drugs in rural health centers in Lesotho – A pilot project

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ABSTRACT

Background: The roll-out of antiretroviral therapy to rural health centers in different districts is beneficial to the Basotho nation. Lesotho is the third country in Southern African countries with the highest adult HIV/AIDS prevalence rate of 23.2%. Decentralization of ART has greatly affected the pharmacy profession due to lack of qualified pharmacy personnel those being pharmacists and pharmacy technicians.

Method: Rural health centers in Butha-Buthe, Leribe, Mafeteng, Mokhotlong, Qacha's Nek and Thaba-Tseka were monitored. Initial assessments were conducted for good dispensing practices, ordering skills, inventory management skills, and reporting skills followed by mentoring and didactic trainings for staff. Lastly, evaluation of clinics was done by looking at the ARV supply chain management situation using specific outcome indicators including number of updated bin cards, number receiving exact quantity of ARVs ordered, number with expired ARVs, and number able to calculate the average monthly ARV consumption.

Results: The baseline evaluation demonstrated that health centers (H/Cs) ran out of ARVs (pediatric formulations mostly), some did not receive the same quantity of ARVs ordered, bin cards were not updated in most H/Cs, there were expired ARVs in some H/Cs, and absence of refrigerators for cold chain supply. After mentoring and didactic trainings, majority of clinics had updated bin cards, adequate supply of ARVs, they could calculate ARV average monthly consumption, they try submitting their requisition forms and reports on time, and absence of expired ARVs.

Conclusion: Further monitoring and evaluation of such supply management tools should be undertaken to aid the process of decentralization. The District Health Management Team pharmacists should visit their health centers regularly for encouragement and intensive supervision.

Key words: Rural health centers, pharmacy assistants, antiretrovirals, inventory management

INTRODUCTION

Lesotho is a mountainous country landlocked by South Africa. In southern African countries, namely, Botswana, Lesotho and Swaziland; the national adult HIV/AIDS prevalence rates are 24.1%, 23.2% and 33.4% respectively (Bokazhanova & Rutherford, 2006: 4). Lesotho is the third country with the highest HIV/AIDS prevalence. It is divided into 10 districts namely Maseru, Butha-Buthe, Leribe, Berea, Mokhotlong, Thaba-Tseka, Qacha's Nek, Quthing, Mohale's Hoek and Mafeteng.

Lesotho health system is segregated into the public sector, the Ministry of Health and Social Welfare (MOHSW), in partnership with the Christian Health Association of Lesotho (CHAL) as a non-governmental organization. There are a total of 17 hospitals; nine belonging to MOHSW and eight to CHAL, five filter clinics and 165 health centers (Ministry of Health and Social Welfare, 2008: 2).

The availability of antiretroviral therapy (ART) for everyone has shown improvement in life-expectancy of HIV-positive patients that is, decreased mortality and morbidity rates. The pharmacy department has a crucial role to play in the provision of quality antiretroviral therapy (ART) care, through both ensuring an efficient supply of medicines and delivering patient-oriented services to promote appropriate use (Walkowiak & Keene, 2004: 237).

In developing countries, the scale up of ART has greatly affected the pharmacy profession due to lack of qualified pharmacy personnel those being pharmacists and pharmacy technicians. As a result, pharmacy assistants are seen doing pharmacy work which includes inventory management, reporting/recording, dispensing and patient counseling in clinics. The health posts and the primary health centers in the rural areas are manned by community health assistants who do not possess a medical qualification (Palaiian *et al.*, 2010: 202).

The pharmacy assistants include nurses, cleaning staff, security guards, expert patients; basically any person who volunteers to help in the pharmacy due to work over load and lack of personnel in the clinics. Nurses provide assessment of patients during follow-up visit; refill patients' medications without having them see a clinical officer or physician; dispense medications and provide initial counseling and drug adherence counseling (Muula *et al.*, 2007: 2).

In Lesotho, there is a district health management team (DHMT) in all districts of which a pharmacist or head pharmacy technician forms part of this team and their responsibility is to supervise and mentor pharmacy assistants in the clinics. There are also partners who work hand-in-hand with the DHMT pharmacist/head pharmacy technicians to promote positive clinical

outcomes for patients on ART in terms of drug availability and mentoring of pharmacy assistants.

The different partners include Baylor College of Medicine Children's Foundation and Medecins Sans Frontieres (MSF) whose support complement each other and also work closely with the Lesotho Ministry of Health and Social Welfare. Baylor and MSF have pharmacists whose responsibilities are to mentor and supervise the health centers' personnel on inventory management, reporting/recording, dispensing techniques and patient counseling. They also help with transportation of medicines to the different sides.

The government of Lesotho has a mandate to look after the health and welfare of Basotho through the Ministries of Health and Social Development. Job creation for all Basotho graduates in the profession of pharmacy has to be considered. Lesotho produces its own pharmacists and pharmacy technicians, through National University of Lesotho and the National Health Training College respectively. For safe use of medicines and the safety of Basotho, the government of Lesotho should not rely on pharmacy assistants with no pharmaceutical training at all. Moreso, effects produced by the medicines are unique and hence may not be predicted by everyone therefore, for a better patient care, the healthcare professionals need to know about the harmful effects of the existing medicines (Palaian *et al.*, 2010: 180).

Lack of appropriately trained employees may lead to occurrence of adverse drug reactions, drug-drug interactions, cross-contamination and dispensing errors. These compromise patient safety and therefore there is a great need for qualified personnel and intensive training and supervision of the pharmacy assistants. Reducing medical errors has become an international concern and population-based studies from a number of nations around the world have consistently demonstrated unacceptably high rates of medical injury and preventable deaths (WHO, 2005: 7).

The cost of health will be increased due to treatment of adverse drug reactions, switching of patients to second line therapy and treatment of side effects caused by cross-contamination. The second line antiretroviral medicines are very expensive. Economic constraints limit the range of accessible antiretroviral medications, making a handful of drugs responsible for most toxicities in developing countries (Subbaraman *et al.*, 2007: 1093).

Adherence is the most crucial component in ART as non-adherence may lead to drug resistance, poor quality of life and death. Regimen specific patient counseling can be done effectively by trained personnel or pharmacists/pharmacy technicians. The major causes of non-adherence to HAART are forgetfulness, lack of understanding of treatment benefits, severity of adverse events, and the level of

complexity of the drug regimen (Abaasa *et al.*, 2008: 2).

There are DHMT pharmacists/head pharmacy technicians who are responsible for supervision and training of the pharmacy assistants in the clinics. Their work is made more difficult as there is lack of transport to those health centers. The clinics are either over-stocked or have a shortage of ARVs as a result of lack of training of pharmacy assistants on proper quantification, recording and reporting of the consumption data to the Ministry of Health and Social Welfare. This leads to improper forecasting and budgeting for medicines. As a result the patients end up suffering as they would sometimes have to miss their daily doses due to lack of ARVs.

It is important for the government of Lesotho to generate more funds to be able to recruit qualified pharmacists and pharmacy technicians to do the pharmacy work since Lesotho produces its own personnel. Also training of pharmacy assistants and intense supervision is of paramount importance. This will help prevent extra costs which the country will incur due to drug resistance, adverse drug reactions and side effects. Lastly, quality clinical practice will be carried out which will lead to improved patient care.

PROBLEM STATEMENT

In Lesotho, pharmaceutical personnel have always been restricted to the hospitals and urban clinics leaving rural clinics pharmacies to be manned by

untrained assistants with no clear jobs specification, the scale-up of antiretroviral therapy has made matters worse, looking at the nature of pharmaceutical care required in managing patients with HIV who are not supposed to run out of their antiretroviral medicines, who are treated for opportunistic infections and other disease, who are many and increased the population of patients seen at the clinic significantly. HIV patients require proper counseling on use of medicines, continuous supply of medicines, monitoring of adverse drug reaction and adherence, relying on just anyone to provide this type of pharmaceutical care, who may even be a volunteer, hence not take any responsibility of what could go wrong with the patient, is unjust for the patient. Hirschhorn *et al.*, (2006: 2) indicated that causes of these deficits include the following: low salaries and poor working conditions; unequal geographical distribution of health staff within a country or district; morbidity and mortality of health care workers living with HIV/AIDS; and regulations restricting critical activities (e.g. dispensing, prescribing, laboratory analyses) to specific cadres of health personnel.

GENERAL OBJECTIVES

To illustrate the importance and outcome of training and intensive monitoring of pharmacy assistants in the rural health centers in Lesotho, who carry out pharmacy activities which include dispensing,

ordering, inventory management and reporting of medicines.

DESIGN/METHOD

This was a pilot project conducted in rural health centers in Lesotho. The project was carried out over a period of 18 months from January 2010 to June 2011. The numbers of clinics assessed were as follows: Butha-Buthe (7), Leribe (15), Mafeteng (4), Mokhotlong (8), Qacha's Nek (6) and Thaba-Tseka (7). Each district had either a DHMT pharmacist/head pharmacy technician. Initial assessments conducted focused on good dispensing practices, ordering skills, inventory management skills, and reporting skills.

The assessment was followed by mentoring and didactic trainings which were then carried out for staff on ordering of ARVs, inventory management, using stock cards, and good dispensing practices. Trained staff included nurses, nurse assistants, cleaners, counselors and others identified in the clinics as working in the pharmacy. Lastly, the clinics were evaluated by looking at the ARV supply chain management situation using specific outcome indicators including number of updated bin cards, number receiving exact quantity of ARVs ordered, number with expired ARVs, and number able to calculate the average monthly ARV consumption.

RESULTS/DISCUSSION

Different health centers used different strategies in the pharmacy. They included the use of appointment

books, diaries or tally sheets to record type of medication and quantity dispensed and then using this information to update the bin cards at the end of the day. The bin cards were then used to calculate the consumption rate which will be used for ordering of drugs. This information was also used for compiling reports for the Ministry of Health and Social Welfare which were used for forecasting and budgeting for medicines.

The baseline evaluation showed that health centers ran out of ARVs (pediatric mostly), some did not receive the same quantity of ARVs ordered, bin cards were not updated in most clinics, there were expired ARVs in some centers, and the absence of refrigerators for cold chain supply. The bin cards were not updated at the end of day in some clinics and this led to the clinics running out of medicines because the personnel could not calculate the average monthly consumption which was used for ordering medication.

Also due to the same reason as above the health centers were either under-stocked or over stocked which led to expiry of medication. Reports submitted to the ministry were based on assumptions which might cause a problem with forecasting and budgeting of medicines for the entire country. Lastly the different documentations they used when dispensing, appointment books, diaries or tally sheets, would get misplaced thus losing data.

Presence of expired medicines was also due to the personnel not practicing the first-in-first-out (FIFO)/first-expiry-first-out (FEFO) system in inventory management. There is also lack of transport to supply other clinics with medicines which might be overstocked in another clinic to avoid them expiring. Lack of transport is another constraint as the DHMT pharmacist/pharmacy technician is not able to visit the clinics regularly for supervision.

After mentoring and didactic trainings provided for workers on ordering of ARVs, inventory management using stock cards, and good dispensing practices, majority of clinics were doing well. They had updated bin cards, adequate supply of ARVs both adult and pediatric, they could calculate average monthly consumption, they tried submitting their requisition forms and reports on time, and lastly absence of expired medicines.

CONCLUSION

Drug supply management interventions can help to ensure that patients have a constant supply of ARVs and scarce resources should be efficiently utilized, bearing in mind that funding of antiretroviral medicines is donor based mostly. In Lesotho, human resource limitations that are caused by not employing available and appropriate pharmaceutical staff, pharmaceutical management and patient care become particularly difficult at rural HC level.

RECOMMENDATIONS

- The government should consider funding for salaries for pharmacists or pharmacy technicians to work in health centers since the country's teaching institutions are producing enough qualified pharmacy personnel.
- It is important for DHMT pharmacists/head pharmacy technicians to visit their health centers regularly to support personnel with minimal pharmaceutical training and they should have a transport schedule submitted to their different transport officers for that to be done effectively.
- They must also be supported by partner organizations to maintain supervision, particularly with changes in national guidelines and available ARV formulations.
- Local Government to considering hiring pharmacy technicians to work in the clinics throughout the country.

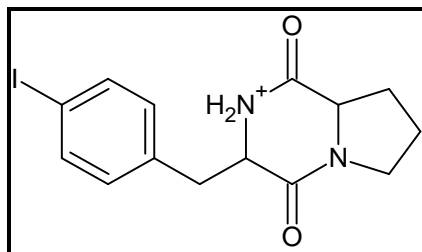
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Antimicrobial activity of the cyclic peptides, Cyclo(D-Phe-4I-Pro) and Cyclo(L-Phe-4I-Pro)

L.Qhola & P.J.Milne



Abstract

Cyclic dipeptides have been widely used as pharmaceutical agents due to their favourable properties and the fact that they are more stable and membrane permeable than their linear analogues. These characteristics make cyclic dipeptides attractive to protein-based drug developers (Martins & Carvalho, 2007). Cyclic dipeptides and their derivatives continue to hold the attention of synthetic chemists and biologists alike. Given the continuing and growing interest in cyclic dipeptides and their chemistry, a review of the area seems timely (Lambert *et al.*, 2001). The principal aim of the study was to determine the antimicrobial activity of cyclo(D-Phe-4I-Pro) and cyclo(Phe-4I-Pro) using a qualitative and quantitative approach. The objective of the study was to determine the microbial activity of cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-Pro). Antimicrobial studies showed that cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-

Pro) inhibited the growth of selected Gram-positive, Gram-negative and fungal microorganisms.

Introduction

Cyclic dipeptides have found tremendous attention in diverse aspects of science ranging from rational drug design to nanomaterials. These diverse applications are due to: (1) their distinctive properties, such as ease of synthesis and characterization, (2) introduction of chemical diversity by simple amino acid substitution and (3) modulation of 3D structure by chemical modification. The application of peptides as drugs has become a priority especially because of their key role in many signal transduction pathways, which makes them an attractive avenue to target diseases (Marx, 2005; Teixido & Giralt, 2008). Cyclic dipeptides and their derivatives continue to hold the attention of synthetic chemists and biologists alike. Apart from the occurrence of a variety of naturally occurring bioactive metabolites, cyclic dipeptides are often more stable *in vivo* than their linear counterparts and

therefore often represent promising drug candidates. Another feature that contributes to the appeal of cyclic dipeptides is their reduced conformational mobility which allows them to be used in the study and mimicry of protein folding and to present diverse functionality in a defined and predictable manner. Given the continuing and growing interest in cyclic dipeptides and their chemistry, a review of the area seems timely (Lambert *et al.*, 2001). Cyclic dipeptides are important natural products. They have been widely used as pharmaceutical agents due to their favourable properties and the fact that they are more stable and membrane permeable than their linear analogues. These compounds have several advantages over ordinary peptides i.e., higher binding affinities and a greater degree of specificity in peptide-receptor interactions which may result after cyclization of the peptides. These characteristics make cyclic dipeptides attractive to protein-based drug developers (Martins & Carvalho, 2007). An increasing number of multi-drug resistance diseases have become a serious problem for pharmaceutical manufacturers and this has led to intensive research efforts to develop new and more effective drugs. Antimicrobial peptides have already played a crucial role in pharmaceutical research as biomedically useful agents or as lead compounds for drug development (Shai, 2002). Milne *et al.* (1998) investigated the biological effects of cyclo(Phe-Pro), cyclo(Tyr-Pro), cyclo(Trp-Pro) and cyclo(Trp-Trp) and revealed that

they have antibacterial and anticancer activity. No extensive studies have been undertaken to determine the antimicrobial activities of cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-Pro), and since cyclo(Phe-Pro) have shown potential antibacterial and anticancer activity, the investigation of the biological activity of the halogenated cyclo(Phe-Pro) is therefore necessary.

Material and methods

Antimicrobial activity of cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-Pro)

The methods employed by Stevens & Olsen (1993), Freimoser *et al.* (1999), Kilian (2002) and Janse van Rensburg (2006) were adapted to develop a method to test the antimicrobial activity of cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-Pro) against selected microorganisms. The Gram-positive and Gram-negative bacteria were plated onto nutrient agar (Merck, Germany), and *C. albicans* was plated onto potato dextrose agar medium (Merck, Germany). This was done to maintain the integrity and viability of the cultures that were used. The organisms were then incubated overnight at 37°C and 28°C respectively with subsequent sub-culturing to ensure growth of pure colonies. Mueller-Hinton broth was used for overnight activation of microbial cultures. The test organisms were scraped off from the relevant agar plates using a flame sterilized platinum loop. The organisms were inoculated into 15 ml sterile Mueller-Hinton broth and incubated at 37°C (for bacteria) or

28°C (for *C. albicans*) in an orbital shaker at 100 rpm for 24 hours. The cultures were then sub-cultured by transferring 100 µL of the test organism into 15 ml sterile Mueller-Hinton broth and the cultures were then incubated for 16 hours at 37°C for bacteria and 28°C for *C. albicans*, in an orbital shaker at 100 rpm. The turbidity of the test cultures was measured at 540 nm (for Gram-positive and Gram-negative bacteria) and 600 nm (for *C. albicans*) using sterile Mueller-Hinton broth as the blank. 50 µl of each test organism was aseptically transferred into sterile 96-well microplates, thereafter 50 µl of cyclic dipeptides at concentrations of 1 mM and 2 mM were added which resulted in final concentrations of 0.5 mM and 1 mM in each well. 50 µL of each of the positive controls were pipetted into the respective cells according to the test organism cultures giving final concentrations of 0.25 mg/ml and 0.5 mg/ml (chloramphenicol) and 0.5 mg/ml and 1 mg/ml (amoxicillin) in the respective wells. 50 µL of the negative control was pipette to the separate wells to indicate 100% viability of test organism growth. The 96-well microplates were incubated at 37°C for bacteria and 28°C for *C. albicans* in an orbital shaker at 100 rpm for 24 hours. After incubation, 40µlof MTT dye (0.5 mg/ml) was added to each well. Absorbance was immediately measured on

a microplate reader to obtain zero reading time at 540 nm for bacteria and 600 nm for *C. albicans*. The plates were again incubated at 37°C in an orbital shaker at 100 rpm for 4 hours to allow for the metabolic reduction of MTT. The plates were subsequently removed from the incubator and centrifuged at 3000 rpm (Eppendorf 5804R, Germany)for 7 minutes to pellet the insoluble formazan product (Freimoser *et al.*, 1999). The supernatant of each well was aspirated off and discarded. The formazan product present was dissolved in 90 µl DMSO and placed on a plate shaker for four minutes. Absorbance was then read at 540 nm for bacteria and 600 nm for *C. albicans*. Experiments were conducted in triplicate.

Statistical analysis

All results were obtained in triplicate values and represented as a mean ± standard deviation (SD). Data was represented graphically with the aid of Microsoft Excel® and Graphpad Prism 5®. To determine whether the cyclic dipeptides under study caused statistically significant results, student *t*-tests were conducted. Calculated *P*-values of less than 0.05 were defined as an indication of statistical significance.

Results and discussion

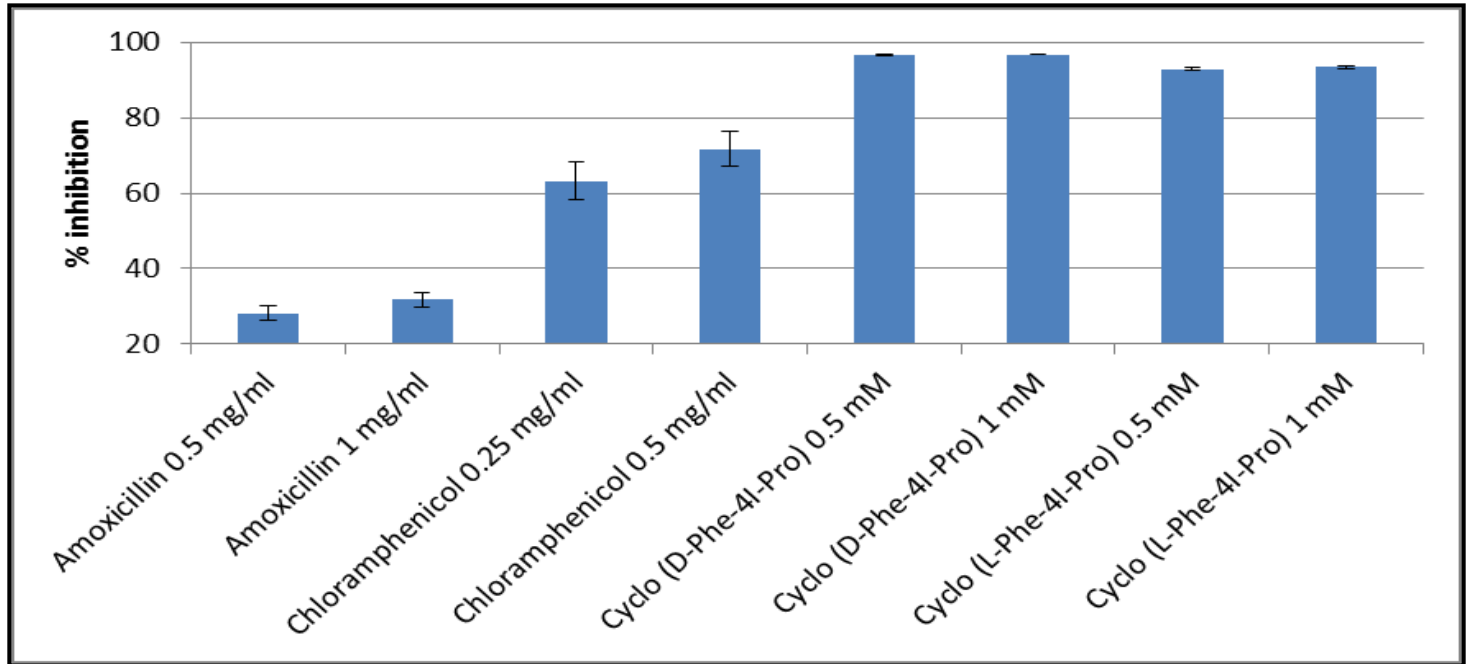


Figure 1: Percentage growth inhibitions of *S. aureus* after 24 hours exposure to cyclo(D-Phe-4I-Pro), cyclo(L-Phe-4I-Pro),chloramphenicol and amoxicillin

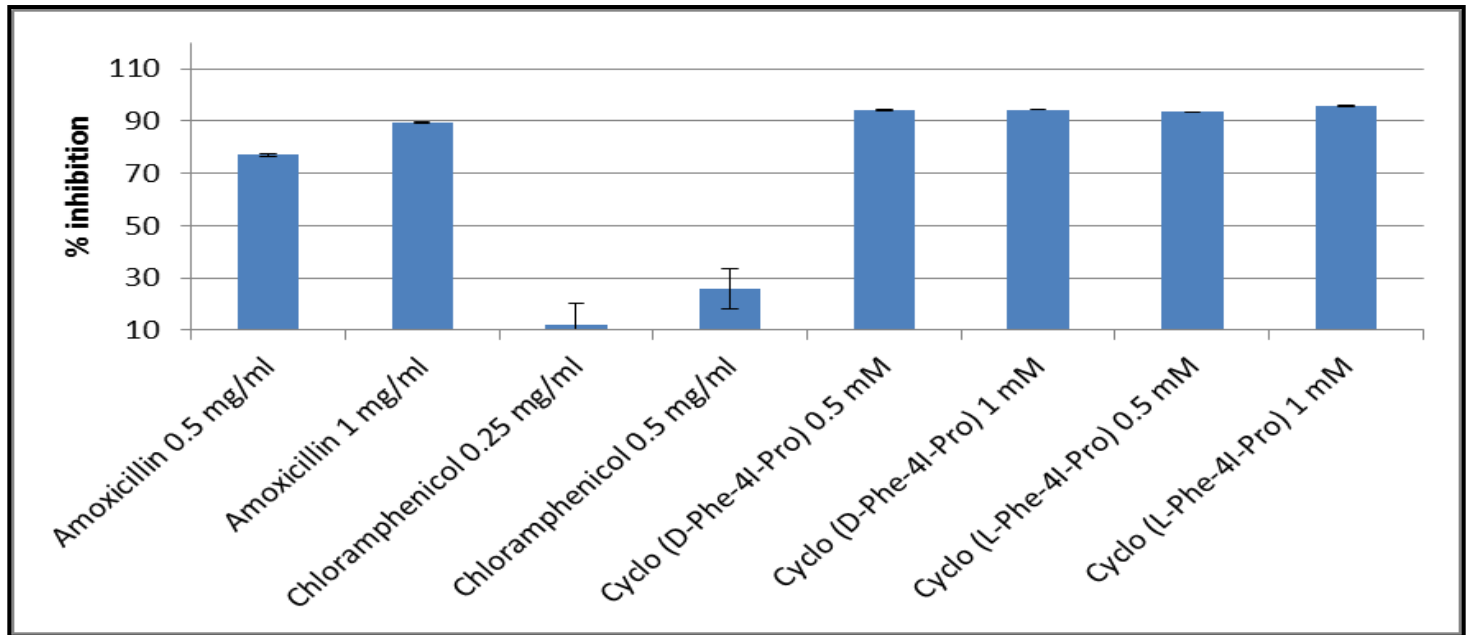


Figure 2: Percentage growth inhibitions of *B. subtilis* after 24 hours exposure to cyclo(D-Phe-4I-Pro), cyclo(L-Phe-4I-Pro),chloramphenicol and amoxicillin

ANTIMICROBIAL ACTIVITY

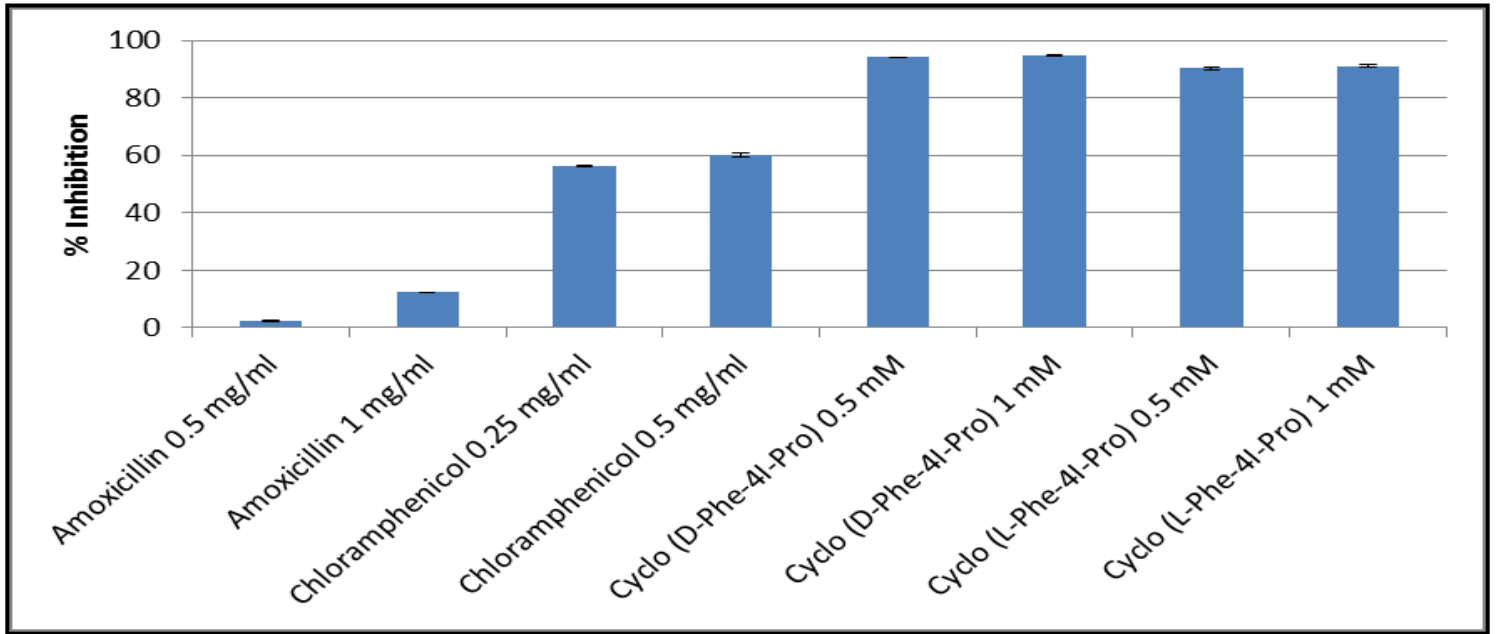


Figure 3: Percentage growth inhibitions of *E. coli* after 24 hours exposure to cyclo(D-Phe-4I-Pro), cyclo(L-Phe-4I-Pro), chloramphenicol and amoxicillin

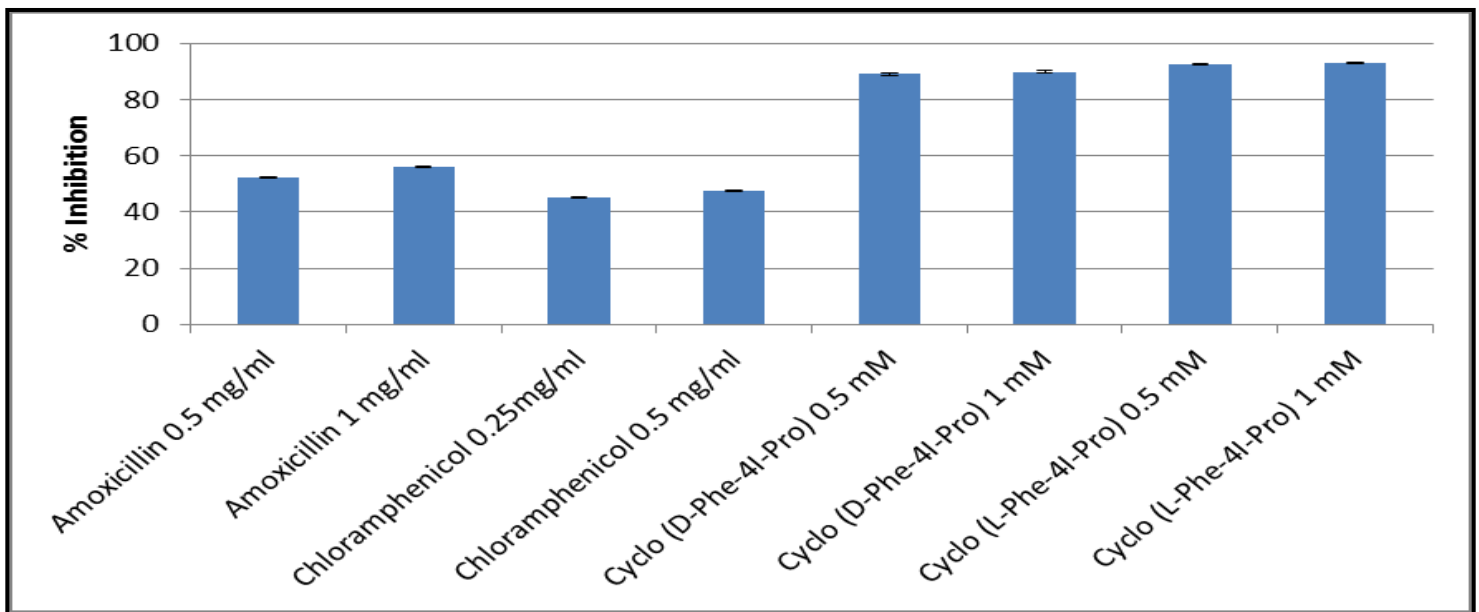


Figure 4: Percentage growth inhibitions of *P. aeruginosa* after 24 hours exposure to cyclo(D-Phe-4I-Pro), cyclo(L-Phe-4I-Pro), chloramphenicol and amoxicillin

A N T I M I C R O B I A L A C T I V I T Y

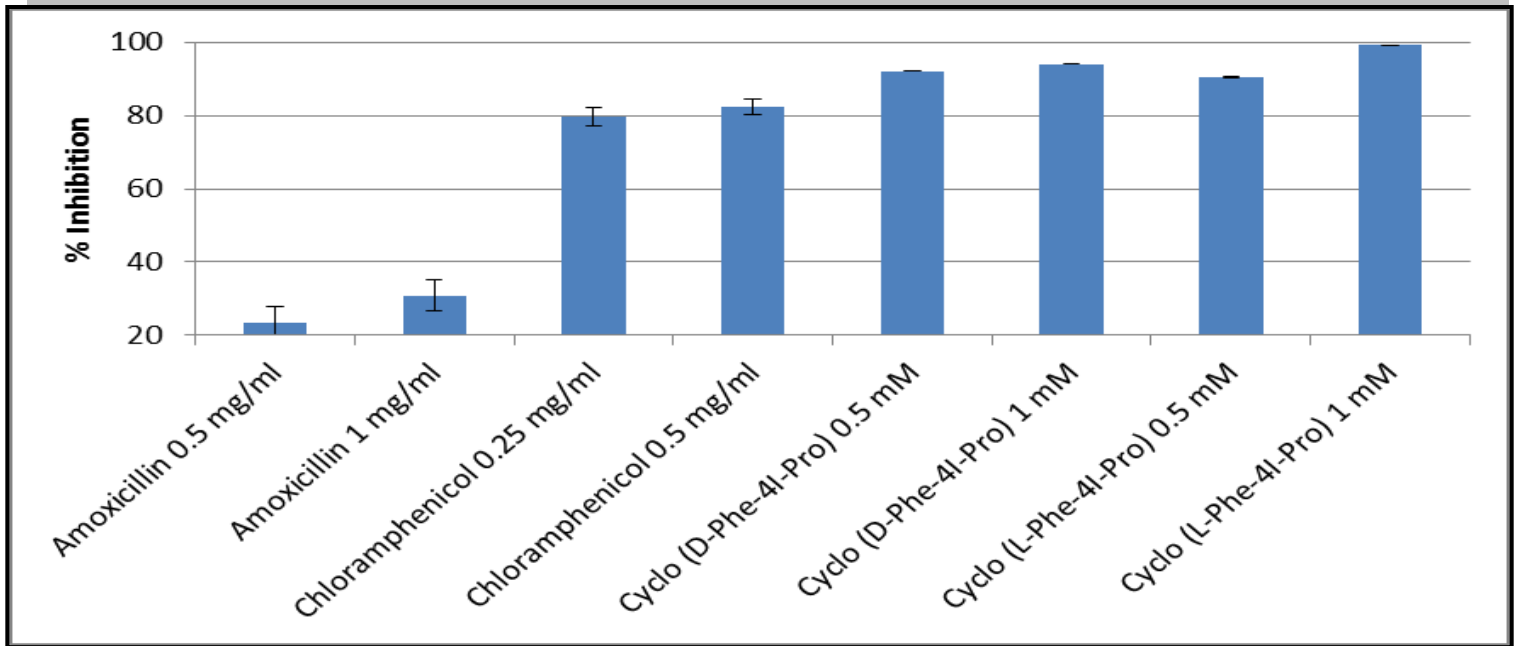


Figure 5: Percentage growth inhibitions of *C.albicans* after 24 hours exposure to cyclo(D-Phe-4I-Pro), cyclo(L-Phe-4I-Pro),chloramphenicol and amoxicillin

Percentage growth inhibitory effects caused by different screening concentrations of cyclo(D-Phe-4I-Pro), cyclo(L-Phe-4I-Pro), chloramphenicol and amoxicillin against selected microorganisms after 24 hours exposure are illustrated in Figures 1 to 5. Cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-Pro) showed greater percentage growth inhibitions than the effects exhibited by chloramphenicol and amoxicillin. Amoxicillin at screening concentrations of 0.5 mg/ml and 1 mg/ml showed growth inhibitions of $28.25 \pm 0.02\%$ (P -value < 0.0001) and $31.78 \pm 0.02\%$ (P -value < 0.0001) against *S. aureus*, $77.6 \pm 0.48\%$ (P -value < 0.0001) and $88.97 \pm 0.31\%$ (P -value < 0.0001) against *B. subtilis*, $2.37 \pm 0.01\%$ (P -value < 0.0001) and $12.37 \pm 0.02\%$ (P -value < 0.0001) against *E. coli*, $52.66 \pm 0.28\%$ (P -value < 0.0001) and $55.68 \pm 0.21\%$ (P -value < 0.0001) against *P. aeruginosa* and $23.41 \pm 0.04\%$ (P -value $<$

0.0001) and $30.97 \pm 0.03\%$ (P -value < 0.0001) against *C. albicans* respectively. Chloramphenicol at screening concentrations of 0.25 mg/ml and 0.5 mg/ml showed growth inhibitions of $63.64 \pm 0.39\%$ (P -value < 0.0001) and $71.14 \pm 1.07\%$ (P -value = 0.002) against *S. aureus*, 12.14 ± 0.02 (P -value < 0.0001) and 25.86 ± 0.04 (P -value < 0.0001) against *B. subtilis*, $56.39 \pm 0.16\%$ (P -value = 0.0008) and $60.44 \pm 0.78\%$ (P -value < 0.003) against *E. coli*, $45.42 \pm 0.37\%$ (P -value < 0.0001) and $47.80 \pm 0.21\%$ (P -value < 0.0001) against *P. aeruginosa* and $79.39 \pm 0.83\%$ (P -value < 0.0001) and $83.25 \pm 0.93\%$ (P -value = 0.0005) against *C. albicans* respectively. Cyclo(D-Phe-4I-Pro) at screening concentrations of 0.5 mM and 1 mM showed growth inhibitions of $96.66 \pm 0.03\%$ (P -value < 0.0001) and $96.72 \pm 0.03\%$ (P -value $<$

0.0001) against *S. aureus*, $94.07 \pm 0.02\%$ (P -value < 0.0001) and $94.37 \pm 0.02\%$ (P -value < 0.0001) against *B. subtilis*, $94.09 \pm 0.01\%$ (P -value < 0.0001) and $94.78 \pm 0.02\%$ (P -value < 0.0001) against *E. coli*, $88.97 \pm 0.02\%$ and $89.87 \pm 0.01\%$ (P -value < 0.0001) against *P. aeruginosa* and $92.12 \pm 0.03\%$ (P -value < 0.0001) and $94.06 \pm 0.03\%$ against *C. albicans* respectively. Cyclo(L-Phe-4I-Pro) at screening concentrations of 0.5 mM and 1 mM showed growth inhibition of $92.90 \pm 0.02\%$ (P -value < 0.0001) and $93.38 \pm 0.02\%$ (P -value < 0.0001) against *S. aureus*, $93.55 \pm 0.03\%$ (P -value < 0.0001) and $95.71 \pm 0.02\%$ (P -value < 0.0001) against *B. subtilis*, $90.26 \pm 0.02\%$ (P -value < 0.0001) and $91.03 \pm 0.02\%$ (P -value < 0.0001) against *E. coli*, $92.64 \pm 0.02\%$ and $93.13 \pm 0.02\%$ (P -value < 0.0001) against *P. aeruginosa* and $90.47 \pm 0.03\%$ (P -value < 0.0001) and $99.13 \pm 0.03\%$ (P -value < 0.0001) against *C. albicans* respectively. Both cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-Pro) showed excellent antibacterial and antifungal activity against the Gram-positive bacteria (*B. subtilis* and *S. aureus*) and the Gram-negative bacteria (*E. coli* and *P. aeruginosa*) and fungus (*C. albicans*). This increased activity is usually seen in cyclic dipeptides of hydrophobic nature because of their ability to cross the lipid membrane of the microorganism. The ability to cross the lipid membrane may be enhanced by the halogen present in the cyclic dipeptide structure as the halogen bonding interactions are responsible for the different conformations of the molecules at the active site (Yunxiang *et al.*, 2009). It can be concluded that cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-Pro)

showed good antibacterial activity. It is recommended that these two compounds must be tested against other organisms as well to establish their potential as future antibacterial agents.

Conclusion

Cyclo(D-Phe-4I-Pro) and cyclo(L-Phe-4I-Pro) showed broad activity (more than 50% growth inhibition) against selected microorganisms. The broad activity exhibited by both the cyclic dipeptides may be as a result of their hydrophobic nature and their ability to cross the lipid membranes of the microorganisms. The ability to cross the lipid membranes may be enhanced by the halogen present in the cyclic dipeptide structure as the halogen bonding interactions are responsible for the different conformations of the molecules at the active site (Yunxiang *et al.*, 2009). Further studies against more microorganisms should be performed in order to establish the potential of these compounds as possible antimicrobial agents of the future. It is also recommended that the synergistic effects of these two compounds must be investigated.

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Assessment of the Implementation of HIV and AIDS Prevention Strategies Among NUL Students

Lelimo I. T, Sekhants'o M.M. Sebatli L .A. Ranotsi. A.

Abstract

The core element of HIV/AIDS strategies of high education institutions in SADC is to generate, collect, transmit, and expand AIDS relevant knowledge, wisdom, and understanding and practice as part of institutionalized structures while also operating in synergy with national and regional polices,(SARUA March 2006;pg11). Implementing national prevention program with sufficient coverage, scale, and intensity to turn the epidemic around, requires a strong national policy framework that reduces vulnerability, maximizes the accessibility and effectiveness of HIV prevention services and encourages safer behaviors, promotes gender equality and women's empowerment, and reduces stigma and discrimination. NUL as part of the society that is highly affected by the serious pandemic of HIV/AIDS, is also a community that is dominated by youth, the highly infected group in Lesotho. The university recognized the impact of the HIV/AIDS to its society in general and launched HIV/AIDS policy in 2009 as the strategy to respond to the epidemic (LPPA).

A study conducted by Makopoi Molapo, on assessment of knowledge, attitudes, practices and behavior of students and staff members toward

people living with HIV/AIDS Among NUL community at Roma campus, she found that students were not ashamed or afraid of explaining AIDS as a cause of death of close relative. In another question they identified that most of the affected and infected people are both men and women in the middle aged group because of being sexually active. On the point of behavior, students revealed that majority of them engage in risky behaviors like sharing tweezers and blades. On the question about risk practices, the NUL staff also reported to have been practicing safe sex about 40% use of condoms and reported that the distribution of condoms on campus was uneven, for example they were found at library only and none at the residences. When the study was done there was no HIV/AIDS policy at the university.

Regardless of the intentions and policies formed in the university since 2009, which aimed, "to increase awareness and community knowledge of the causes, risks and modes of transmission of HIV and AIDS amongst the students and the staff of the NUL", (NUL HIV and AID policy: 2009) students still are seen engaging in dangerous and risky behaviors of HIV/AIDS, and the study was intended to confirm the effectiveness of the prevention strategies implementation.

Introduction

For all problems global health, few has had as devastating as an impact in recent times as HIV/AIDS and few are as unequally distributed across the world's population. The cumulative total HIV infections and deaths since the beginning of the pandemic in 1981 exceeded 60 million and 25 million respectively. Progressively, in 2009, WHO estimated that there were 33.4 million people worldwide living with HIV/AIDS with 2.7 new infections and 2 million annual deaths. The sub-Sahara Africa amongst the other countries remains the hardest hit region accounting for 29.7 million people living with HIV. Despite a wealth of effective preventive strategies, the global pandemic continues to expand. While so questions whether existing prevention methods are capable of slowing down the spread of the epidemic are limited, impact of prevention effort still stand in large measure from low levels of prevention coverage. (Volberding A.P 2008; Pg 92)

The UNAIDS document "Intensifying prevention", articulates basic principle and strategies that from basis of strong national HIV prevention plans. National prevention programs should incorporate each essential programmatic and policy action, however the relative emphasis of specific prevention measures differs by setting based on nature and severity of national and sub-Sahara epidemics.

HIV prevention programming can focus on individuals, couples, social network or communities. Prevention programs have been developed for the general population, through mass media or school based education campaign and counseling and through expanded access to HIV testing and counseling services. Particularly vulnerable populations require tailored prevention programs based on the route of exposure.

In reaction to the problem, the world has made efforts in order to minimize this epidemic and Lesotho, amongst the highest prevalence countries with the 23.2% in 2007, was engaged. The highest rates in Lesotho are among the young people those ages 15-29 especially the hard hit. Although HIV prevalence remains high in all areas of Lesotho recent surveys show that HIV is disproportionately affecting urban areas. (Volberding A.P 2008; Pg 567)

In all heavily affected countries the AIDS epidemic is adding additional pressure on the health sector. As the epidemic matures, the demand for care for those living with HIV rises, as does the toll of AIDS on health workers. Amongst 2.9million of Lesotho's population, 29.8% of the general population is infected with HIV. The average life expectancy had declined from 50 years in 2000 to 34 years in 2005, but has improved to 40 in 2007, coinciding with increased access to free antiretroviral therapy (ART). Without the HIV/AIDS epidemic, life expectancy

would be an estimated 75 years (Medscape Today, 2011). The pandemic has a profound effect especially on the poorest population resulting in tremendous increase in orphaned children whereby the household dissolves as parents die and children lack care and upbringing, food security and agricultural work abandoned or neglected due to household illness, children forced to abandon school and in some cases women may be forced to turn to sex workers due to lack of income and many others consequences leading to high morbidity and mortality rate.

Students are seen to practice HIV/AIDS risky infections which could predispose them to new infections and re-infections and we found out that there was no study recently conducted based on the implementation of HIV/AIDS prevention after the launching of the NUL HIV/AIDS policy hence why we want to see the implementation of the policy.

Efforts to increase prevention among young people need improvement since 27% and 15% of young men and women respectively, are sexually active before their 15th birthday (GOL/UNAIDS 2006) while 40% of parents do not want children in early teens to learn about condoms at school. The impact of the epidemic on young women is dire, as less than 10% of women aged 18-19 are positive, yet 40% become positive by age 24 (UNAIDS Epidemic update 2006:14). Some of the key drivers of HIV include multiple concurrent sexual partnership (MCP), poverty and poor access to services, gender-based violence (GBV), and lack of

preventive education. Teenage population is some of the worst affected with sexually transmitted infections (STI) and rising pregnancies. In work places, institutions lose valued labor, with lower productivity and incur massive staff costs (NUL HIV/AIDS POLICY 2009;2).

The level of knowledge on HIV/AIDS

In response to HIV/AIDS, NUL established the policy in 2009 to combat HIV and AIDS. The key committee to implant interests is the National University of Lesotho HIV and AIDS Committee (NULHAC). One of the objectives of NULHAC aims to achieve increased information, education and awareness among the university community regarding HIV/AIDS. They also aimed to increase knowledge and understanding relating to this pandemic. HIV prevention programming can focus on individuals, couples, social network or communities. Prevention programs have been developed for the general population, through mass media or school based education campaign and counseling and through expanded access to HIV testing and counseling services. Particularly vulnerable populations require tailored prevention programs based on the route of exposure.

Assessment of use of safe sex practices.

The most intensifying prevention articulates use of safe sex behaviors which include abstinence, use of

male and female condoms and faithfulness even though abstinence is mostly not reliable but it is still encouraged. The NULHAC's objective "improved understanding by members of the university community regarding the prevention of HIV infection and the mitigation of the effects of HIV on infected and affected members", involves safe practices.

Magnitude of sexually transmitted diseases and pregnancy level

The Lesotho Parenthood Planning Association sentinel HIV and Syphilis Survey (2010) showed that prevalence of HIV among STI patients was high at 56.2% (52.6%- 59.7%). Among young people aged 15-19 and 20-24, HIV prevalence among STI clients was around 20% and 40% respectively compared to the prevalence among young people surveyed in 2004 LDHS which was at 7.72%. The adjusted HIV prevalence among young women aged 15-24 was 14.9% compared to 5.9% among young men in the same age (LPPA strategic plan 2010-2014). Prevention and treatment of STIs has been used as one of the strategies of preventing spread of HIV. However, these have failed to address social, economic and power relations between women and men, among men and among women. These relationships, together with physiological differences, determine to a great extent women's and men's risk of infection, their ability to protect themselves effectively and their respective share of the burdens of the epidemic.

Women are physiologically more vulnerable to HIV infection than men. Young women are especially at risk and aids death rates are highest in women in their 20s (Challenges facing HIV/AIDS STD; gender based response, Maria de Bruyn, at al;1995).

Alcohol and drug use

In Lesotho, alcohol and drug abuse is believed to contribute to the spread of HIV infection among students (ALAFA 2008), and people with alcohol abuse are more likely than the general population to contract HIV. Similarly, people with HIV are more likely to abuse alcohol at some time during their lives. Alcohol use is associated with high-risk sexual behaviors and injection drug use, two major modes of HIV transmission. Esther Samartojo stated in USAID Annual report of 2007 that HIV prevention behavior is affected by the environment as well as by characteristics of individuals at risk. HIV related structural factors are defined as barriers to, or facilitators of, an individual's HIV prevention behaviors; they may relate to economic, social, policy, organizational or other aspects of the environment.

HIV/AIDS stigma

NULHAC'S purpose is to prevent discrimination or stigmatization of those infected and the affected as stated in NUL AIDS Policy (2009). Moreover, stereotypes related to HIV/AIDS and STI's and their association with marginalized groups (e.g., sex workers) contribute to blaming women for the spread

of HIV. Fear of stigmatization inhibits people from taking preventive measures and leads women and men to assess their own risks inadequately. Furthermore, many ideas and expectations regarding male and female (sexual) behavior neither encourage men to act responsibly and protect themselves and their partners from infection nor stimulate women to challenge notions of female inferiority and social structures which keep them vulnerable.

Methodology

The type of study design used was an exploratory study as little information is known about the implementation of HIV/AIDS prevention strategies among NUL student. Because HIV/AIDS is a devastating problem there are still people around NUL campus who are seen indulging in risky behaviors so it remains a question which needs to be explored about implementation of HIV prevention and because there is active policy of HIV/AIDS at NUL aiming at prevention of spread of HIV among students as one of their goals and major objective. The study was conducted at National University of Lesotho at Roma campus because students of high education are our targeted population. The study was based on NUL students since they are most people at risk. A cluster of seven faculties were sampled. A simple random sample was taken from all faculties. From a study population of 7784 students enrolled in

academic year 2011/12, a representative sample of 63 was needed. To obtain this sample, 0.8% of students from each faculty were sampled randomly. One student was used as a study unit. Data collection technique used was administration of questionnaires to 63 selected students. The sampling method used was probability sampling in which simple random sampling method was used. The sample was 63 students from each faculty where 0.8% of students were taken.

Eight questionnaires were administered to Classmates before data collection in order to test for understanding and how sensitive they were in order to make adjustments where needed. Some question's validity was tested by use of control questions in order to verify certain answers and for reliability the response to the same question of the two questionnaires have to correlate.

Ethical consideration

In recognition to authority and professionalism, a letter was written to dean of student affairs requesting permission to collect information from students. Data was collected during the second semester of the year 2011/2012 when most of the students were available on campus. The participants were given a choice of either participating or abstaining.

Data processing and analysis

Data analyses technique used was statistical package for social sciences (SPSS) where coding was used for both closed ended and open ended questions to enter data. Frequency tables, cross tabulations, bar charts and pie charts were used to present data. Analysis was done by checking top and bottom variables to assess trends or opinions of respondents. Qualitative and Quantitative analysis were used, that is, qualitative involves the information and exploration of a number of mutually related variables in a nature and cause of certain problems. While quantitative is used to quantify the size, distribution and association of certain variables in study population.

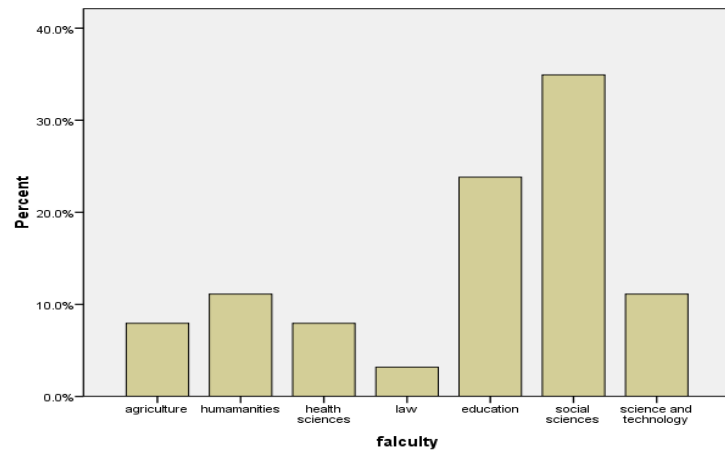
RESULTS

Section A: Knowledge Attitudes and Practices(KAP)

Analysis

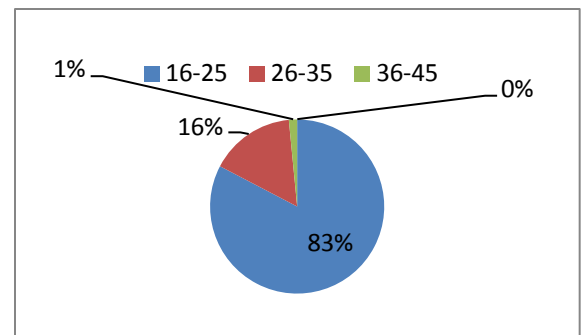
Among NUL students enrolled for 2011/2012 (77840 students) as our study population, only 63 students of which 29 males and 34 females were selected and 0.8% from each faculty, both staying off campus and in campus and most of them age between 16 and 25. The data was analyzed based on our specified objectives that appear on the previous pages.

Diagram.1 percentage of students per faculty



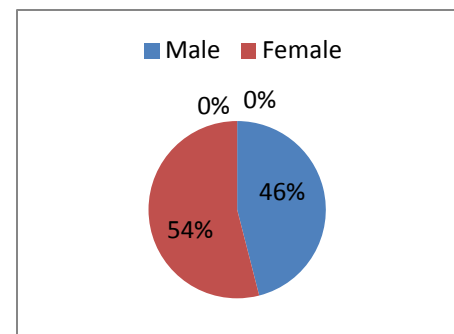
The diagram 1 shows the percentage of students selected as representatives of each per faculty.

Diagram 2 Range of students' ages



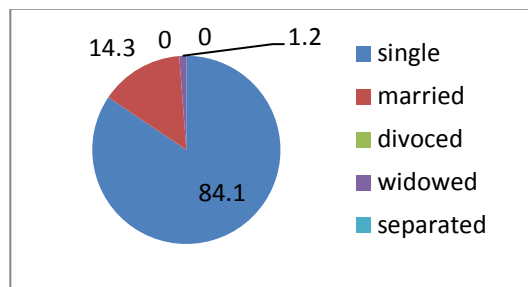
Most of the respondents are youth ranging between the age of 16 to 25 with 83% and the least are those of 36-45 of age.

Diagram3 Gender



Majority of the respondents is composed of the females and this brings to the conclusion that majority the NUL students are females.

Diagram 4 Respondents' Marital status



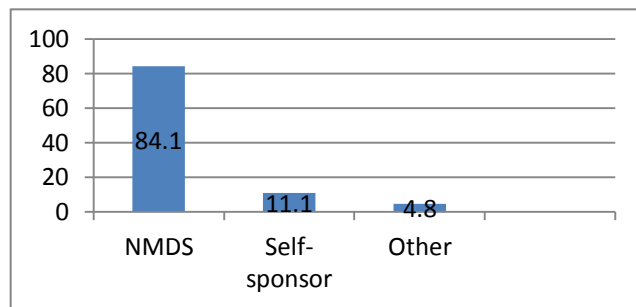
The students who are single make the largest percentage of NUL population and few are married and widowed while comparatively insignificant students are divorced and separated.

Table1. Percentage of respondents' roommate

Reside with	Frequency	Percentage
Alone	37	58.7%
Roommate	11	17.5%
Relative	9	14.3%
Spouse	2	3.2%
Not response	4	6.2%
Total	63	100%

Among all respondents, just 17.5% were staying in campus while huge number stays off campus. On the bases of roommate, large numbers are stay alone 58.7%, 14.3% with relatives, and 3.2% with their spouse.

Diagram 5 Bar chat for Student Sponsors



A huge number of the students are sponsored by National Manpower Development Secretariat (NMDS) and other sponsors, and 11.1% are self-sponsored. This implies that most students are financially covered pertaining academic issues.

Section B; Policy Analysis

Assessment of NUL AIDS policy was done using scale that range from 0- 10 for each components. There are ten components used and scaled by; 0 to 4 poor, 5 average and 6-10 very good. All the components are added in order to give a total of 100 where the scores are rated; (0-49) poor and (50-100) good.

Table1. Policy assessment

Component	# who scored <50%	Percent %	# who scored ≥50%	Percent %
Ownership of policy	50	79.4%	13	20.6%
Access to the policy	54	85.7%	9	14.3%
Ease of use	10	15.8%	53	84.2%
Policy	23	36.5%	40	63.5%
Prevention	13	20.6%	50	79.4%
Capacity building	50	79.4%	13	20.6%
Care and support	47	74.6%	16	25.4%
Community building	59	93.7%	4	6.3%
Resource mobilization	52	83.5%	11	17.5%
Research, teaching, monitoring	44	69.8%	19	30.2%

Biographical data

From the results the NUL campus population is dominated by the youth, age range of 16-25 which is regarded as the most sexually active people and at risk that made 81% of our study units.

Level of knowledge on HIV/AIDS

The questions were intended to identify the level of knowledge of students related to HIV/AIDS and whether the knowledge they have acquired was provided from the university. 92.1% have shown to

have received knowledge where the major sources are the NUL health clinic and classes. Students were also asked if they would encourage education on HIV to be provided around campus and they have shown to like to be kept updated and given more information on HIV/AIDS stating the fact that NUL students are at risk, especially due to the behavior around the campus. Even though students answered most of the questions about knowledge most of them were not able to write HIV/AIDS in full and this shows that most of the people do know about the disease but they do not care about implementing their knowledge.

Assessment of safe sex practices

The questions asked on this variable were intended to assess the use of safe sex practices. On the questions of whether students have ever engaged in risky behavior, most students have encountered unprotected sex and most of the time it was due to use of alcohol. Students were asked how often they use condoms during sexual contact and only 49.2% have shown to use them always, some use them occasionally and 17.5% reported not to use condoms at all. The UNAIDS report of 2006 stated, one of the key drivers of HIV is MCP, on this study it is found that more males indulge in MCP than females and this emphasizes that there is still high risk of new infections and male being the key drivers. On the question of how many partners a person has 77.8%

have one partner of which they always use condom with. Even though students reported use of condoms they reported the problem that they do not always get free condoms around campus as some did not know the areas of placement. Students have reported use of condoms as the major preventive method encouraged here around campus.

Use of alcohol and drugs

Majority of the students interviewed reported not to use alcohol and 41.3% which use alcohol reported that they always remember to use condoms if they engage in sexual behaviors and their behaviors is hardly influenced by alcohol as they reported not to lose control and only alcohol was used as it is the common drug around campus.

Pregnancy level, STIs level and HIV stigma

87.3% of students reported to have never been diagnosed with STIs on the assessment of STIs on the question of STI prevalence. On the question of how they perceive stigma of HIV around campus, they reported it to be high and also shown when asked how they call HIV infected people they use stigmatizing languages and the pregnancy level around campus is very high as they report.

In brief summary, the respondents showed that they have a lot of knowledge on prevention and HIV and AIDS services are highly accessible though exercising of knowledge and utilization of services is very poor. The next section addresses the policy documentation.

SECTION B

Discussion on the Policy Document

The respondents were asked how they view the ownership of the policy and 20.6% showed that it is good, and the large number of them reported not to own it as was their first time to see, on the accessibility of the policy, most of them (85.6%) reported it to be poor and did not know how to obtain it as it is found only from the office of NUL AIDS coordinator and NUL clinic where a limited number of students reach. Every respondent was given a copy of a policy and asked how easy it is to use it, 84.2% reported it as being standardized and written in simple language and terminology. 64% of Respondents have shown to understand the policy development and its specific actions outlined, in order to mitigate HIV/AIDS. On prevention, 80% of the respondents knew about the prevention measures indicated and they understood but the question remains, why are they still at risk? It could be that they opt or are compelled to indulge in those risky behaviors.

On resource mobilization, 80% of students reported it to be poorly implemented as there is no mobilization of resources, especially human, material, and skill as stated in the policy. Majority showed that nothing is done by either the university or its subordinates to help identify possible human and material sources for use on HIV and AIDS interventions and projects.

Only 25.4% of respondents reported the care being good at the certain stakeholders like NUL health Centre but in the case of other stakeholders, to mention the few, student representative committee (SRC) and faculties, reported it to be poor. They made example with Faculty of Health sciences that do nothing on occasion like International AIDS day. Most students reported not to know about the outreach activities for example they reported that they do not see any implementation especially within the NUL community, also showed that use of internet, as the major mode of communication, especially for youth can be a useful if they can have access of policy as the NUL has website. On research, 30.2% showed that it is adequate but there is poor teaching and provision of new, relevant information, hence outdated internationally. Until now there is no incorporation on HIV and AIDS aspects in university curriculum as stated as one of objective under these thematic, respondents reported.

All in all, the policy thematics are understandable, clearly and written in simple everyday English but the major problem lies with the implementation and access of the policy especially through the stakeholder's roles.

Conclusion

The NULHAP is not easily accessed by students hence it is not effective. Students hardly know about

it and have not been introduced to it, so there is poor access and this result in poor implementation of the policy. On the KAP assessment students have knowledge about HIV/AIDS but they do not practice what they know because the knowledge they have, become boring as they are not motivated by being given new information and due to circumstances of peer pressure around campus. They tend to ignore their knowledge hence why they engage in risky behavior and the policy should be able to come in with their strategies.

Review of the Thematic Areas

- i. **Ownership of policy:** Most of the respondents reported not to own the policy as their property, and only 20.4% show to own it.
- ii. **Access to policy:** The access seems to be very poor as most of the respondents show that it is not available where it can be easily seen like on the corridors rather only available from the office of AIDS Coordinator and NUL health centre.
- iii. **Ease of usage of policy:** Most of respondents reported the use of the policy simple and easy as it is written in the simple language and understood.
- iv. **Policy Development:** Majority of the respondents, that is, 65.5% of them do worth to be congratulated due to its development as it is on standards.
- v. **Prevention:** On prevention as one of the policy thematic, 79.4% the respondents showed to understand and see it as one of the most effective.

- vi. **Capacity Building:** Very few respondents show to have had a support and benefits as the associations, but 74.9% of students reported it being so poor.
- vii. **Care and support:** Larger percentage of respondents also showed that care and the support is very poor looking that follow-up to the community remains the question to them.
- viii. **The community outreach:** The respondents on outreach, just 6.3% which is very insignificant as compared to 93.7% knew about the outreach the NULHAC is doing about prevention between NUL and the community.
- ix. **Resource mobilization:** The respondent showed that the policy on resource mobilization is critically poor as majority does not know about the AIDS committee at NUL.
- x. **The research, teaching and monitoring and evaluation:** Here, only 30.2% showed that NULHAC is doing well on the research, teaching and monitoring and evaluation though they see teaching, monitoring and evaluation as disaster because NULHAC is not improving its services to its community.

Respect to respondents' results, there is a poor magnitude of policy distribution and accessibility that needed to be improved.

Limitations

Data delayed due to the lecture's strike that postponed the second semester time table hence the delay. Some of the questions were left unanswered despite they were pretested. Our questionnaire took a longer time than expected hence delay in data collection

Recommendations

Policy accessibility should be improved such as that distribution during academic registration or be put in the library in order to improve access.

NULHAC should make a website to keep students well informed and up to date and create a link on the NUL website for NULHAC in order to provide information precisely for individual, academic and the community at large.

The stakeholders of NULHAC should be well incorporated in planning so that they participate effective to improve implementation for example Faculty of Health Science to participate in research and projects to improve on implementations especially on community outreach and this would involve external stakeholders like Ministry of Health and Social Welfare (MOSH).

The preventive majors that can be most useful to students are provision of knowledge and provision free condoms as this was shown by many

respondents and this can only be achieved by the help of the policy by increasing displaying areas. Use of preventive measures can be very useful to students if they can be used properly.

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Antibiotic Prescribing Patterns at Six Hospitals in Lesotho

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Introduction

Antibiotics are among the most widely used medicines in the world. A large portion of antibiotic use appears to be for viral or spontaneously resolving bacterial infections. The Centers for Disease Control and Prevention (CDC) estimates that about 100 million courses of antibiotics are prescribed by office-based physicians each year, and that approximately one-half of those prescriptions are unnecessary¹. Studies evaluating physicians' prescribing patterns have found that almost 50% of office visits for colds and upper respiratory tract infections (URTIs) and 80% of visits for acute bronchitis are treated with antibacterial agents. This prescribing pattern persists despite the fact that antibacterial agents have no significant benefit for the resolution of viral diseases, such as the common cold².

Sometimes doctors say that they prescribe antibiotics to patients because patients demand them, so they are compelled to satisfy patients³. Patient satisfaction surveys indicate that patients do not acknowledge putting such pressure on their physicians. One survey indicated that although 65% of patients expected to receive an antibiotic for treatment of a URTI, there was no correlation between patient satisfaction and

receipt of an antibiotic prescription. Instead, patient satisfaction correlated highest with the quality of the physician-patient interaction. Results from focus groups indicate that patients would be satisfied if an antibiotic was not prescribed as long as the physician explained the reasons for the decision to withhold antibiotics⁴.

Inappropriate use of antibiotics is not only giving an antibiotic where or when it is not indicated. It can also be giving the correct antibiotic for an incorrect duration, i.e., too long or too short a time. In some cases, the correct antibiotics can be given in combination with medicines that interact with the antibiotic, in which case the therapeutic benefits are minimized⁵.

There are many consequences that result from the inappropriate use of antibiotics; one of them is the development of antibiotic resistance. Another important consequence is increased costs incurred by government, patients, insurance schemes, or other third-parties when antibiotics are misused. Governments spend a lot of money to treat resistant strains because they lead to prolonged hospital stays, prolonged antibiotic treatment and use of more expensive antibiotics, and so on.

The 1985 World Health Organization (WHO) conference on rational medicine use (RMU) marked the beginning of efforts to improve the use of medicines, especially in developing countries. The First International Conference on Improving Use of Medicines, held in Thailand in 1997, identified the need for a set of indicators and appropriate methodology to assess the use of medicines, particularly antimicrobials, in hospitals. The Second International Conference on Improving Use of Medicines confirmed the need for medicine use indicators to measure trends in pharmaceutical management, prescribing, and dispensing in the public and private sectors. The detection of problems with the use of antimicrobial medicines in hospitals is the first step in evaluating the underlying causes and taking remedial action⁶.

The Ministry of Health and Social Welfare (MOHSW) has been actively assessing pharmaceutical management and use of medicines since 2007 through the Medicines Access Surveys (2007 and 2009). Because the management and use of antimicrobials has clinical, economic, and environmental implications, the MOHSW enlisted its partner, the Strengthening Pharmaceutical Systems (SPS) Program, to carry out a more focused assessment on the use and management of antibiotics at six hospitals in Lesotho.

Objectives and Methods

The aim of the study was to investigate antibiotic prescribing patterns at six hospitals in Lesotho listed below. The goal was to investigate whether doctors are prescribing according to the Standard Treatment Guidelines (STGs) or empirically. It also investigated whether prescribers are aware of the STGs.

Quantitative and qualitative techniques can be employed to evaluate patterns of medicine use, and these can answer different questions relating to determination of the patterns as well as the reasons behind these patterns.

Quantitative data was collected, counted numerically, and used to identify the prescribing patterns within the six hospitals. Qualitative data was used to measure prescribing patterns and to provide answers relating to the reasons behind the identified prescribing patterns.

Seven medicine use indicators- three core, one patient, and three complimentary indicators- from the WHO Drug Use Indicators (Outpatient Facilities) list⁷ were assessed. These indicators assess performance of district-level health care facilities.

Sample selection was convenient, focusing on hospitals that were already supported by SPS. Support for the hospital pharmaco-therapeutic committees (HPTCs) and data management with RxSolution[®], an electronic pharmaceutical data

management tool developed by Management Sciences for Health, was considered during sampling. Data collectors were trained and the data collection tools were piloted at the main referral hospital in Lesotho, Queen Elizabeth (QE) II Hospital.

Results and Discussion

All patients presenting to the pharmacy April 12-21, 2011, with a prescription containing an antibiotic were enrolled in the study, a total of 1528 patients. Of these, 39% were male and 61% were female (Figure 1).

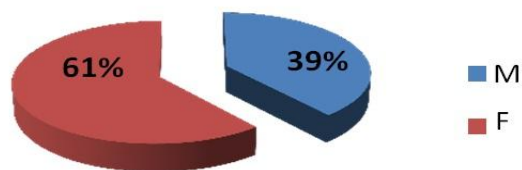


Figure 1: Gender distribution of patients enrolled in the study

The average number of medicines per encounter across all six facilities was 3.8, with Berea Hospital had the highest figure at 4.4, and Botha Bothe Hospital had the lowest at 3.3. The average number of medicines per encounter is higher than the range of 1.3-2.2 found in similar studies in other countries conducted at district or regional levels, either at hospitals or health centers⁸. The 2009 Medicines Access Survey indicated that on average 3 medicines are prescribed per encounter in Lesotho⁹.

The average number of antibiotics prescribed as a percentage of the total number of medicines prescribed across all six hospitals was 37.6% (Figure 2), which is lower than the 45.5% indicated in the 2009 Medicines Access Survey, and within the range of 29-43% determined in a number of previous similar studies⁸.

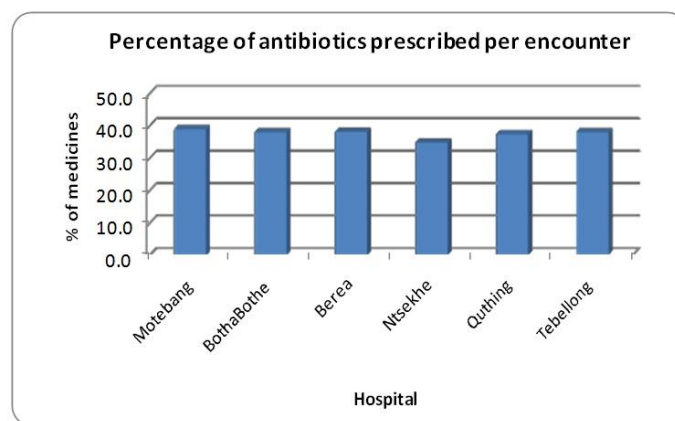


Figure 2: Percentage of antibiotics prescribed per encounter

The total cost of medicines prescribed at all six study sites was approximately \$25,549.49¹; the average cost per encounter was roughly \$3.15.

Even though antibiotics account for approximately 37.6% of all prescribed medicines, in terms of cost, they account for 69.1% of the total expenditure of medicines across the six hospitals during the study period (Figure 3). Typically, antimicrobials account for 20-40% of the hospitals' medicines expenditures. Therefore, these results indicate that the cost associated with antibiotic use at the six study hospitals is unacceptably high.

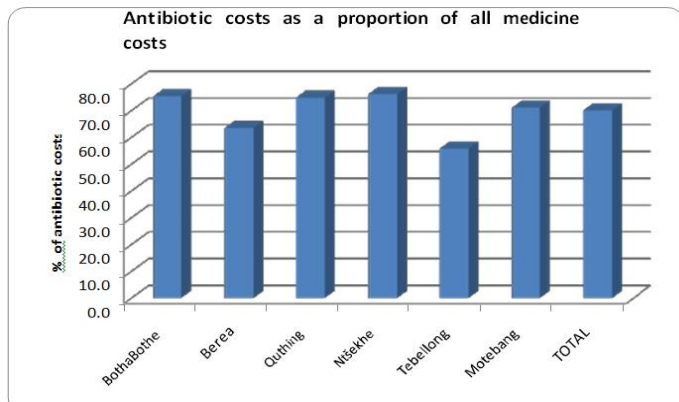


Figure 3: Antibiotic costs as a proportion of all medicines costs

On average, 79% of the prescribed medicines across all six hospitals were from the essentials medicine list.

Percentage of prescribed medicines actually dispensed is an important measure of availability of medicines and therefore serves as a proxy indicator for the supply chain's efficiency. Of the 5,650 prescribed medicines, 5,050 (89.4%) were actually dispensed. This indicates that the performance of the system is quite high and essential medicines are generally available for the patients' use. Berea Hospital is the facility with the lowest rate, with only 64.2% of the prescribed medicines being dispensed, which indicates a low rate of availability of essential medicines from this facility. Botha Bothe was the best performing facility with 99.8% of the prescribed medicines actually dispensed.

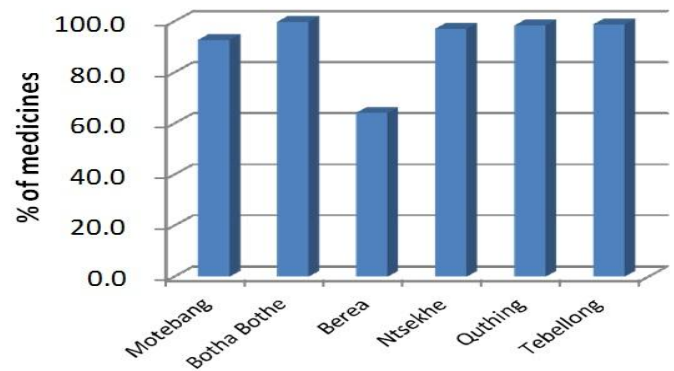


Figure 4: Percentage of prescribed medicines actually dispensed

For settings that have a set of treatment guidelines nationally, measuring adherence to the guidelines is an important indicator for RMU. During this assessment, the average adherence rate to STGs at the six hospitals was found to be 42.8%. This low adherence to STGs represents an important area that warrants educational and managerial interventions that the HPTCs can support. In addition, quite a significant number of encounters in which no diagnosis was indicated were found, with 34.8% of encounters at Ntšekhe Hospital indicating no diagnosis at all (Figure 5). This poses a serious challenge for monitoring RMU at facilities.

P R E S C R I B I N G P A T T E R N S

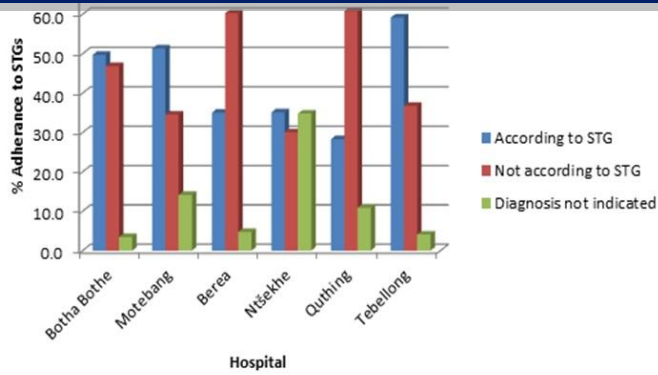


Figure 5: Percentage of prescribers adhering to STGs

Structures and systems such as HPTCs, STGs and EML play an important role in RMU at facilities. Prescribers' opinions are believed to have a direct effect on use of these structures and their impact on RMU⁶. Figure 6 illustrates that 52.4% of prescribers interviewed said there is an HPTC at their facility, 61.9% said they had a copy of the STGs, and 81% indicated there is need to improve antibiotic prescribing.

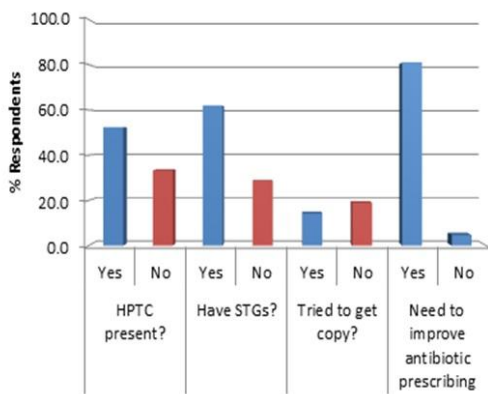


Figure 6: RMU structures and systems at the six hospitals

Qualitative data analysis indicated that in general, prescribers at the six hospitals believe that STGs and

HPTCs are critical tools for improving RMU at the hospitals, and particularly antibiotics to prevent emergence of resistance. They also believe that the pharmacy should play a more active role in dissemination of the STGs and ensuring that HPTCs are functional at the hospitals. Some indicated that there should be improvement on implementation of interventions developed by the HPTCs, as some decisions made by these committees are never implemented.

The limited choice of medicines at the hospital, as determined by the EML and STGs, as well as the frequent stock outs of medicines at the pharmacy, were also cited as having a great impact on adherence of prescribers to the guidelines. Prescribers felt that the current STGs and EML are outdated and do not conform to current practices and available information. Limited laboratory facilities were also cited as being prohibitive to improving rational use of antibiotics at the hospitals.

Conclusions and Recommendations

The results indicate that polypharmacy may be a problem in Lesotho in outpatient settings, and adherence to STGs is low. Cost impact of use of antibiotics at the hospitals is enormous and this has a huge bearing on the contribution of the pharmaceutical expenditure to the general health expenditure. This may indicate a need to examine the

supply chain system, in particular, the purchasing prices of commodities at the central level, the National Drug Services Organization, should be examined.

The use of tools, structures, and systems, such as STGs, HPTCs, and facility-specific RMU programs, needs to be strengthened to improve use of antibiotics at hospitals. STGs should be revised regularly and made widely available at facilities. Continuous professional development should be encouraged and in-service training programs on RMU and supply chain management should be instituted at facilities. Supportive supervision and mentoring of facility staff by the central and district levels should be strengthened.

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An Overview of the SPARRC Program and Its Impact on the Human Resource for Health (HRH) Situation in Lesotho

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¹Lesotho Boston Health Alliance

Background

Lesotho is facing a mammoth task of recruiting and retaining her physicians, pharmacists, nurses and healthcare professionals. In view of this, the Lesotho-Boston Health Alliance introduced the Strengthening Professional Associations' Retention and Recruitment Capacity (SPARRC) program in order to curb the incessant brain-drain of Basotho healthcare professionals' to South Africa and beyond. According to the World Health Organization the doctor-patient ratio in Lesotho hovers around 1: 14,000, which is one of the highest in SADC region. Thus, the SPARRC program is mainly initiated to help build the management competencies of the four health professional organization namely the Lesotho Medical, Dental and Pharmacy Council (LMDPC), Lesotho Medical Association (LMA), Lesotho Nursing Council (LNC), and the Lesotho Nurses Association (LNA). With mentorship from the South African Medical Association (SAMA), Democratic Nursing Organization of South Africa (DENOSA), Southern African Network of Nurses and Midwives (SANNAM), Health Professionals' Council of South Africa (HPCSA), and the South African Nursing Council, the management competencies of the organizations has improved. The program was also to

encourage more Basotho doctors and nurses abroad to come and serve in Lesotho as well as encourage hundreds of Basotho medical students to come and serve in the country immediately after completing their studies.

Early Successes of the Program

From inception of the program in January 2011 to date, SPARRC has ensured successful hosting of 22 monthly Learning and Sharing Forums which have seen over 60 healthcare professionals attending each event. The participants are mostly medical doctors and nurses who convene at the last Thursday of every month to discuss wide-ranging health issues. The Learning and Sharing Forums are the first of this kind in the history of health reform process of Lesotho. Though Continuing Professional Development (CPD) is still in a nascent stage in Lesotho, the forums have set a precedence for which the medical doctors' and nurses can make CPD points. In addition, a yearly Health Professionals Symposium is held at the Queen Mamohato Memorial Referral Hospital. So far three of such symposiums have been held. These forums have created a relaxed yet educative environment for which all healthcare professionals (doctors, nurses, pharmacists etc) interact beyond conventional working place and everybody is free to

contribute to the discussions with no fear of sanction. What is more? The program assisted the LNC to develop a CPD program for nurses in the country and it's yet to help the LMDPC to develop a CPD program for doctors, pharmacist and the like in the country.

The Government of Lesotho is deeply committed to training as many Basotho medical doctors as possible and testimony to this is over 200 Basotho medical students studying in several universities in southern Africa, with the largest chunk of students being in South Africa. However, impressive as the statistics as maybe, Lesotho is battling to recruit a satisfactory percentage of Basotho medical doctors to the country. In the last two years, SPARRC has pioneered and fully sponsored high profile visits to several medical schools in South Africa to encourage Basotho to come and serve in their native country and plans are afoot to go further to Zimbabwe and Malawi. These high profile visits boast high-ranking delegates from the Lesotho Medical, Dental and Pharmacist Council, Lesotho Medical Association, Human Resources (Ministry of Health), and the National Manpower Development Secretariat (NMDS). These visits have played a huge role in giving students updates on what is happening in the Lesotho health sector as well as the opportunities and challenges. Most importantly, the visits have forged invaluable links to the students and the Lesotho health sector Authorities. The trips and data base created by the program has enabled authorities to track the progress

of all Basotho medical students studying outside Lesotho.

Prior to SPARRC program, Basotho medical students across South Africa and beyond did not have one unifying association. Through SPARRC, the Lesotho Medical Students Association which was only active in University of Kwazulu Natal has been expanded to include all Basotho medical students in South Africa, Zimbabwe and Malawi to fall under one umbrella body. During the last caucus meeting in June 2012 facilitated and SPARRC with sponsorship from the European Union, a new committee comprising students from all South African and Zimbabwean universities were elected and endorsed by all the delegates at the caucus. Delegates at the caucus meeting vowed to return to Lesotho to serve after the completion of their studies.

For the second year in a row, SPARRC co-sponsored Basotho medical students' health expos organized in four districts, including Mafeteng, Qacha's Nek, Butha-Buthe, and Mokhotlong with the latter being one of the most remote and hardest to reach places in Lesotho. The medical students from different universities in South Africa attended to over 300 patients during the course of the week long expo programs. Students indicated that the expos gave them the much needed practice as well as making them appreciate the challenges of the health sector,

particularly the human resource situation and the terrain of the country. In addition, students offered free career guidance advice to high school students in Mokhotlong, encouraging them to aspire to become medical doctors in future given the doctor-patient ratio in the country.

The SPARRC program has facilitated the creation of websites for all the partners. The websites of the organization can be visited on:

<http://www.lmc.org.ls>

<http://www.lnc.org.ls>

<http://www.lma.org.ls>

<http://lesothonursesassociation.org/>

The websites are used to update health professionals of health events in the country and keeps them up-to-date of their organization.

More so, strategic planning training has been held for all the partners and some of the partners have developed strategic plans for their organizations.

Challenges

The greatest challenge will be for the partners to keep the momentum after the SPARRC program phase out at the close of the year's time. It is hoped however that, the four partners (LMA, LNA, LNC, LMDPC) are up to the task to facilitate most of the activities especially that their capacity have been developed to a large extent. But the challenge remains that most of

the activities are Maseru based and there is the need to decentralize most of the activities to the district levels. This mainly stems from poor resource mobilization both financial and human. In order to offset this impeding challenge, more funding should be sought from the European Union and other donors' to decentralize the activities of the SPARRC program to the districts. Without more funding, the benefits of the SPARRC program will remain a Maseru base.

Sexual Assault & Gender Based Violence in Lesotho: Survey results of healthcare providers experience dealing with victims of gender-based violence.

Brian Pentti MD & Sebaka Malope MD

BACKGROUND:

Sexual assault and gender-based violence (GBV) are prevalent throughout the world. The WHO Study on Women's Health & Domestic Violence Against Women⁴, based on 24,000 interviews with women aged 15-49 years from 10 countries, found that in 13 of the 15 sites studied, between 35 to 76% of women had been physically or sexually assaulted by someone since the age of 15. Data from this study also suggests that while violence may be prevalent, most victims do not present to service providers (ranging 3-30% of victims ever reporting assault to either police or healthcare providers).

The immediate and long-term health implications of sexual assault and gender-based violence include physical injury, unwanted pregnancies (with higher rates of complications such as miscarriages, low-birth weights, premature labor⁷), abortions, sexually transmitted infections (including HIV/AIDS), gynecological complications, post-traumatic stress disorder, depression, suicide, development of high-risk behaviors (smoking, drug use, unsafe sex behaviors), amongst others. In addition to problems for the victim, there is also evidence that children of

victims of violence have increased rates of behavioral and emotional problems⁸.

The risk of HIV transmission being associated with gender-based violence perhaps deserves special attention given current rates of HIV in Lesotho. A recent study reported that relationship power inequity & intimate partner violence increased risk of HIV transmission for a woman by a factor of 1.5% compared to controls who were in relations with power equity¹⁰. The authors of this study propose many possible reasons for this, but suggest one of the main reasons is that violence in the relationship prevents women from influencing the circumstances of sex, resulting in more frequent sex and less condom use.

In addition to health implications for the victim, there are significant societal implications. In Mexico City, gender-based violence was estimated to be the 3rd most important cause of morbidity and mortality¹¹. In Australia, it accounted for 7.9% of overall disease burden among women of reproductive age, with larger risk to health than hypertension, tobacco use, and obesity¹². In Canada, direct medical costs for the care of victims of GBV was 1.1 billion dollars in 2002⁵. In Uganda, the cost of care related to domestic

violence was estimated at 2.5 million US dollars in 2007⁶.

The quality of care of sexual assault victims and victims of gender-based violence varies throughout the world. A study of existing services for sexual assault victims published by the South African Gender-based Violence and Health Initiative in 2003, based on input from more than 300 providers throughout South Africa, reported a number of concerns, including structural inadequacies, long waits for victims to be seen, lack of training for providers (1/4 of providers had received training on sexual assault & 1/2 of these had their training during as undergraduates), incorrect treatment of STI's, lack of referrals for counseling, and a lack of coordination between various services (including healthcare providers, police, NGO's)⁹.

INFO ABOUT LESOTHO

There is some evidence that sexual assault is prevalent in Lesotho. One study reported that, following a random survey of 939 sexually active women in Lesotho aged 18-35, that 25% of women reported being physically forced to have sex, another 13% reported attempted forced sex, and 31% reported being touched against their will (50% by community members)¹.

UNICEF recognized the need for services for children who've been sexually assaulted in Lesotho and helped develop the Child & Gender Protection Unit

(CGPU), which is a special branch of the police department to look into crimes of sexual assault. In 2006, Lesotho Ministry of Health and Social Welfare developed basic protocols for the treatment of victims of sexual assault. Remaining challenges per the UNICEF report³ published in 2009 included:

- Ensuring the correct completion of forms by doctors
- Ensuring that health staff give priority to treatment of cases of rape
- Providing a conducive environment and adequate facilities in which to treat survivors of rape (privacy, space, availability of PEP etc.)
- Strengthening the justice system to enforce the necessary legal protection for cases of sexual abuse
- Strengthening the psychosocial care and support system for the survivors and
- Providing places of safety for rape survivors, who often end up being sent back home to the same abusive environment from which they came.

The above challenges were re-iterated when discussed with staff from the Child Gender Protection Unit during a recent visit to Lesotho. Discussions with physicians and nurses in Lesotho have repeatedly reported a lack of training in dealing with victims of sexual assault, a lack of resources, and lack of knowledge of available resources.

Researching the literature does provide some insightful interventions used to address this issue, including the “Refentse Study” ²(meaning “we shall overcome” in Venda). This study, done in rural South Africa, showed that bringing together hospital and community leaders to develop a nurse-driven protocol was effective in improving care of sexual assault victims, including rates of administration of emergency contraception, giving pregnancy test, treatment of sexually transmitted disease, HIV counseling, administration & completion of post-exposure prophylaxis, and referral to social worker or psychiatric nurse.

With encouraging findings that treatment of sexual assault victims can be done effectively in rural South Africa based on the Refentse Study, we brought together various health and community leaders to a Learning & Sharing Conference, sponsored by the Lesotho Medical Counsel, on May 19, 2012. To better understand the concerns and issues related to this topic, we provided surveys to the attendee’s and as noted some to the verbal feedback. Below our our findings.

METHODS:

In May 2012, the Lesotho Boston Health Alliance (LeBoHa), in collaboration with Lesotho Medial Association, organized a series of workshops on issues related to care of victims of gender-based violence. Speakers for these workshops included Dr

Brian Penti (LeBoHa/Boston University), Dr Sebaka Malope (LeBoHa, Assistant Director of Family Medicine Speciality Training Program), Carmen Del Rosario (former Director of Boston Public Health Commission’s Domestic Violence Program.) Attendees for the seminars included mostly healthcare workers, although members of Child Gender Protection Unit, Ministry of Gender, and local media also attended. Approximately 200 participates attended during 4 different seminars, including a Learning and Sharing session in Maseru, 2 sessions in Motebang Hospital, and 1 session in Maluti Hospital.

During the seminars on gender-based violence, a survey was distributed to the participants. Below are our findings.

RESULTS:

Initial Data from Lesotho Sexual Assault, Gender-based violence survey:

HAVE YOU HAD TRAINING ON CARE OF SEXUAL ASSAULT VICTIM?

Overall:	22% reported yes
MD’s:	12%
Nurses:	21%

HAVE YOU HAD TRAINING ON CARE OF DOMESTIC VIOLENCE VICTIM?

Overall:	15% reported yes
MD’s:	12%
Nurse:	14%

HOW OFTEN DO YOU TREAT VICTIM OF SEXUAL ASSAULT?

OVERALL:

1-3x/year:	31%
1-3x/month:	22%
1-3x/week:	20%
Daily	11%
None:	7%

This data suggests that 31% of providers are seeing victims at least weekly, and more than 50% are seeing victims more than or equal 1-3x/month. When one considers that the WHO study reports that most victims are not coming to service providers following sexual assault, the numbers could be potentially higher.

HOW OFTEN DO YOU TREAT VICTIM OF DOMESTIC VIOLENCE?

1-3x/year:	28%
1-3x/month:	29%
1-3x/week:	17%
Daily	14%
None:	3%

Again, this data suggest that 31% of providers are seeing victims at least weekly, and more than 60% are seeing victims of domestic violence at least monthly. Again, consider the fact that most victims of gender-based violence are not reporting to healthcare providers.

OVERALL, PROVIDERS CONSISTENTLY REPORTED THAT GENDER-BASED VIOLENCE, BOTH SEXUAL ASSAULT & DOMESTIC VIOLENCE, IS A PROBLEM IN LESOTHO.

What concerns do victims of GBV voice when they come to you?

Based on frequencies of responses:

- 1st: Pregnancy, reported by 44/ 98 respondents
- 2nd: Pain: 47/98 respondents
- 3rd: Legal concerns: 22/98 (specifically bringing legal forms from police)
- 4th: HIV 18/98
- 5th: Emotional pain 12/98 (anxiety, anger, insomnia, depression)
- 6th: concern for STI exposure 11/98

Other concerns noted but with less than 10 respondents include fear of perpetrator, fear of ruining family relations, social stigmatization (4x), and financial concerns (x3, including specifically if perpetrator is providing financial security for victim). Of note, less than 20% present for concerns of HIV or STI, which are potentially preventable if arrived early (similar to emergency contraception).

ARE YOU AWARE OF PROTOCOLS FOR TREATMENT OF VICTIMS OF GENDER-BASED VIOLENCE (EITHER SEXUAL ASSAULT OR DOMESTIC VIOLENCE) ?? If so, WHICH? WHERE ARE THEY KEPT?

YES: 22 out of 95 respondents (23%).

MD's: 33% reported "yes".

Nurses: 16% reported “yes”

Even though approximately 20% of respondents reported knowing of existing protocols, many of respondents reported these were guidelines per UNICEF, WHO, or HIV/AIDS guidelines, not necessarily the guidelines developed by Lesotho Ministry of Health. Many of those who reported knowing of Ministry of Health guidelines were not aware if they were kept at their facility.

DO YOU PROVIDE STD PROPHYLAXIS TO VICTIMS OF SEXUAL ASSAULT??

63% of respondents reported yes, with reported various combinations of ciprofloxacin, doxycycline, and metronidazole as most common reported answer, although 4 respondents stated the provided “condoms” as STD prophylaxis.

DO YOU PROVIDER EMERGENCY CONTRACEPTION FOLLOWING SEXUAL ASSAULT?

Overall, 73% of providers reported yes. Doctors reported providing PEP in 88% of cases. Combined estrogen/progesterone pills were the most often cited medication, which requires 2 doses 12 hours apart. Amongst reasons for not giving emergency contraception included working at a catholic institute, needing to refer patient to higher level of care, or patient’s age.

OVERALL, PROVIDERS WERE CONSISTENTLY RECOMMENDING HIV TESTING AND COUNSELING FOLLOWING EPISODES OF SEXUAL ASSAULT.

DO YOU PROVIDE POST-EXPOSURE PROPHYLAXIS TO VICTIMS FOLLOWING SEXUAL ASSAULT?

Overall, 81% of providers reported giving post-exposure prophylaxis, including 100% of doctors. Among reasons for not prescribing including referring to higher level of care.

DO YOU REFER VICTIMS OF SEXUAL ASSAULT TO SOCIAL WORKERS OR MENTAL HEALTH SPECIALIST?

Overall, 60% of providers report referring to social workers or mental health specialist. When referred, locations referred to include Baylor clinic, Motebang Hospital, MOU, private psychiatrist, Mohlomi, and Mapotsoe filter clinic. Otherwise, clinicians reported social workers are often not readily available at their facility.

IS THERE A PRIVATE EXAM ROOM TO SEE PATIENTS OF SEXUAL ASSAULT?

38% of respondents reported they had a private exam room to see victims of sexual assault.

WHEN TREATING VICTIMS OF GENDER-BASED VIOLENCE, WHO IS THE PERPETRATER?

Amongst the 95 responses:

Partner/husband:	75 responses
Unknown assailant:	49 responses
Employer:	29
Other family relative:	58

Other: 11, including teacher (x2), priest (x1), neighbor (x2), police (x2)

WHAT DO YOU SEE AS CONSEQUENCES OF SEXUAL ASSAULT OR GENDER-BASED VIOLENCE FOR VICTIMS IN YOUR COMMUNITY?

The 5 most frequent responses:

- 1st: Depression/anxiety (25 responses)
- 2nd: Social issues, including stigma & social isolation (19 responses)
- 3rd: HIV infection (15 responses)
- 4th: Sexually transmitted infections (11 responses)
- 5th: Unwanted pregnancies (9 responses)

Additional consequences noted included disabilities (8), poverty/loss of income (4), low self-esteem (3), teenage pregnancy, unsafe abortions (3), suicidal thoughts (4), street kids/child abundance, and becoming a future perpetrator.

WHAT SERVICES ARE AVAILABLE TO VICTIMS OF SEXUAL ASSAULT/ GENDER-BASED VIOLENCE IN YOUR SETTING?

Most frequent responses:

- 1st: psychosocial counseling, social workers (34/95 respondents)
- 2nd: no answer (30) & “no known services” (9)
- 3rd: post-exposure prophylaxis (18)
- 4th: HIV counseling & testing (15)
- 5th: General medical services (15)
- 6th: STI test and treating (14)

Additional responses included: emergency contraception (8), Child Gender Protection Unit (5), pregnancy testing (5), legal services (3), safe houses (2), support groups (2), vaginal swabs to check for sperm.

This data seems to contradict earlier survey question about number of providers who reported providing PEP (which was reported to be >80%), referred to social work/mental health specialist (>60%), provided treatment for STI’s (>60%), and provided emergency contraception (74%). More objective evidence would likely be needed to clarify what actually happens in clinical setting.

HOW COULD SERVICES BE IMPROVED??

The 5 most frequent responses:

- 1st: better coordination of services (14/95 respondents)- including community coordinators and locate all services in 1 location
- 2nd: Public awareness of the problem and services available (13)- including training village healthworkers, and providing health talks to communities and schools
- 3rd: Hire more social workers (8)
- 4th: Training of staff (6)
- 5th: 24 hour access to services.

Additional responses included: training police, toll-free hotline service for victims, having guidelines at workplace, develop confidentiality policies, develop safe homes for victims, improve staffing, avoiding long-waits in queue, provide free services including

transportation, acquire needed equipment & medications.

DO YOU THINK THERE IS GOOD COLLABORATION BETWEEN VARIOUS SERVICES (HOSPITAL, POLICE, NGO'S)? IF NOT, WHAT COULD BE DONE TO IMPROVE COLLABORATION?

22% of providers think there is good collaboration.

Suggestions to improve collaboration, based on frequency, include:

- 1st: Educate and training of all services involved (16 responses)
- 2nd: involve all stake-holders in frequent meetings (6 responses)
- 3rd: develop policies/guidelines (6)
- 4th: Address community standards & beliefs (4)
- 5th: improve the referral system (3)

Other suggestions include: have a specifically trained person in hospital to coordinate care of victim of GBV, barrier analysis study, toll-free hotline for victims, protection of nurses and health staff who care for victims of violence, and centralized location for services.

DO YOU THINK GENDER BASED VIOLENCE AFFECTS MATERNAL MORBIDITY & MORTALITY?? IF SO, HOW??

Overall, amongst those who responded, 92% thought GBV affects Maternal Morbidity & Mortality. Amongst reasons given, the most frequent responses given were:

- 1st: Unsafe abortions (15 responses)

- 2nd: HIV (12 responses)

- 3rd: STI's (10 responses)

- 4th: depression, leading to poor attendance in prenatal clinics (10 responses)

- 5th: Suicide (8 responses)

Other responses included miscarriages, teenage pregnancies, bleeding following assaults, unwanted pregnancies, injuries, death following an assault, and lack of prenatal care from either hiding pregnancy or partner preventing women from going to clinic.

COULD SCREENING FOR GBV OCCUR DURING PRENATAL CARE? IF SO, WHAT SERVICES COULD BE OFFERED IN VICTIM FOUND?

Overall, 82% of respondents agreed that screening for gender-based violence could occur during prenatal care, with victims being offered the following services:

- 1st: counseling and support (18 responses)
- 2nd: legal guidance (7 responses), including educating about process of reporting, explaining the legal process
- 3rd: HIV testing (5 responses)

Additional suggestions about possible actions following disclosure of gender-based violence include referrals to possible safe homes or other programs and STI testing. As noted from some respondents, providers would need to educate themselves to learn about what services exist before attempting to develop screening process.

ADDITIONAL SUGGESTIONS, THOUGHTS, FUTURE TRAINING ITEMS?

Suggestions included country-wide training, including village healthworkers, make guidelines widely available and known to healthcare providers, and continue with maternal morbidity & mortality sessions.

CONCLUSIONS:

The feedback from participants in our seminars and from the surveys suggests that providers are seeing victims of sexual assault and gender-based violence on a regular basis in their clinical settings (31% seeing victims of sexual assault & domestic violence at least weekly, and more than 50% seeing each at least monthly). The survey also suggests that most healthcare providers have not had training on how to care for such victims (22% reported training on sexual assault & 15% reported training on domestic violence).

The survey also suggests that most providers were not aware of the existence of the Ministry of Health's Guidelines on treatment of sexual assault victims. We reviewed the guidelines on our own, and the Ministry of Health guidelines are very comprehensive and in accordance to WHO recommendations, including protocols for evidence collection & documentation, informed consent, treatment of injuries, STD prophylaxis, post-exposure prophylaxis for HIV, emergency contraception and assessment for

psychological sequelae. It also included important information for local providers such as a clear statement that Lesotho law requires the reporting of sexual assault of children to police and a list of potential resources in Lesotho for victims of gender-based violence (including safe house).

The respondents of the surveys also indicated that all involved stakeholders, such as healthcare providers, police (including Child Gender Protection Unit), community leaders, government offices (including Ministry of Gender and Ministry of Health & Social Welfare), NGO's, teachers, politicians, need to work together to address this problems. No one group working alone can solve this problem. Suggestions include frequent multi-agency meetings to collaborate on establishing protocols. As many providers mentioned in the survey, the community needs to be aware of the problem and needs to be involved in addressing the cultural aspects that contribute to the violence.

Victims of gender-based violence need to know they can receive meaningful medical services, even if they choose to not pursue legal actions, if they arrive in timely manner to healthcare providers. Such interventions, such as post-exposure prophylaxis for HIV and emergency contraception, can be effective if given within 72 hours of sexual intercourse.

To assist providers in caring for these victims, easy to understand and readily accessible guidelines should

be available at all facilities. While transferring to higher levels of care may be appropriate in certain circumstances, the effectiveness of emergency contraception decreases with time and does not require significant diagnostics to administer. The same could be said with potentially with PEP.

The safe and effective administration of emergency contraception deserves some special attention, given that many providers were commenting that the consequences of sexual assault include unsafe abortions and unwanted pregnancies. Abortion is illegal in Lesotho, hence a victim of sexual assault who subsequently becomes pregnant is left with few options, either carry a pregnancy she does not wish for or pursue an illegal, unsafe abortion in Lesotho or pay expensive fees for such in South Africa. The benefits of safe effective administration of emergency contraception are obvious, but the community needs to know it is an option.

Going forward, respondents to surveys offered many additional suggestions. Perhaps gather more in-depth data with documentation of actual numbers of victims of sexual assault seen and interventions offered. Perhaps using the interventions used in Refentse study, which included having each clinical site develop sexual violence advisory committee that develops a hospital rape management policy, trains providers, establishes designated examine room, and

develops community awareness campaigns, would be reasonable steps forward.

One of the additional recommendations from the survey recommended exploring ways to protect healthcare providers who may potentially put their own safety at risk by caring such victims. This is certainly worth exploring and potentially develop hospital policies to ensure providers are protected.

Looking back at the recommendation from the South African Gender-based Violence and Health Initiative, they suggested that services could be improved by developing and disseminating clinical management guidelines and ensuring care is provided by staff who gain experience and believe this activity is an important part of their medical role⁹. Lesotho currently has the guidelines and clearly has providers who feel this is an important part of their job. As mentioned by respondents on the surveys, the important next steps may include training one another on the existing guidelines, collaborating with existing services to improve the care of victims of gender-based violence, and to address the cultural issues in the community that may contribute to gender-based violence.

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Scaling up family medicine (FM) and primary health care (PHC) in Africa

Rudolf Schumacher, MD

Lesotho delegates were among the participants from 20 countries who attended the WONCA and Primafamed Conferences at Vic-Falls in Zimbabwe in November 2012. The LeBoHA Family Medicine Specialty Training Program (FMSTP) which is situated at Motebang District Hospital in Leribe was represented by registrars, faculty staff and nurse educators from Lesotho and Boston University alike. Since December 2012 the program is fully accredited and ready to accept new Basotho Medical Doctors who have completed their internship following under-graduate training. The main purpose of the programme is to re-attract some of the young Basotho medical doctors into the national health system. The 4-year curriculum combines proficiency in clinical skills, community health, health management and operational research. In a health system which is primarily reliant on nurses it is important that a family physician is well aware of the function she or he needs to play in a primary care team. The WONCA/Primafamed conference recognized the fact that due to the different conditions prevailing in its member-countries, even if they are neighbors, strategies for development might not always be uniform. Where some countries like Zimbabwe or Sudan may afford to have doctors working on primary care level, others like Lesotho will always

depend on well trained nurses as managers of rural health centres.

This is well reflected in the 'Vic Falls Vision' a document on Scaling up Family Medicine (FM) and Primary Health Care (PHC) in Africa, which the Primafamed-network unanimously agreed upon on 23 November 2012. By publishing the same document in the Lesotho Medical Journal we would like to provide a forum for discussion which can help us to further develop the curriculum of our programme and to define the framework of a Family Medicine Department in the context of a future Medical School in the country.

Scaling up family medicine (FM) and primary health care (PHC) in Africa: the Vic Falls Vision of the Primafamed-network (23 November 2012). This document reflects the work at the 5th annual conference of the Primafamed-network. It provides an analysis of the PHC context in sub-Saharan Africa and strategic ways to strengthen PHC. Taking into account the diversity in Africa, not all issues, proposals, topics are relevant to all African countries. The document was adopted by consensus.

From 21 to 23 of November 2012, participants from 20 countries convened at the Fifth Annual Primafamed meeting (www.primafamed.ugent.be) at Victoria Falls, Zimbabwe. The participants want to contribute fully to the realization of the WHA-resolution 62.12, by contributing "to train and retain adequate numbers of health workers, with appropriate skill-mix, including primary health care nurses, midwives, allied health professionals and family physicians, able to work in a

multidisciplinary context, in cooperation with non-professional community health workers in order to respond effectively to people's health needs".

The participants recognize the importance of the worldwide demographic and epidemiological transition, also for African countries and the impact on health of the worldwide financial and economic crises; these give rise to new challenges for healthcare providers. Moreover the participants stress the need for an integrated approach to comprehensive PHC in order to address the fragmentation of care and health systems as a consequence of vertical disease-oriented programmes (HIV, malaria, COPD, diabetes, etc.). They confirm their commitment to the realization of WHA-resolution 62.12, "to encourage that vertical programmes, including disease-specific programmes, are developed, integrated and implemented in the context of integrated primary health care", the WHO Global Health Workforce Strategy and the WHA 59.23: "Rapid Scaling Up of Health Workforce".

Family Physicians fully support African governments' implementation of Universal Health Coverage oriented towards guaranteeing the right to health for all. This includes implementing the Abuja Declaration of allocating 15% of budget to health; developing nationally socially oriented health insurance systems to provide universal access; single risk pools and adjusted capitated systems to ensure resources go to those who need it most; strong decentralized district health systems responsive to local communities; the inclusion and regulation of the private for-profit and non-for-profit sector as contracted providers; and innovative payments systems to drive improvement of quality in integrated primary healthcare teamwork to achieve "Health for All".

The participants define the future of FM in the framework of the PHC system: a community-based team approach including nurses, family physicians, mid-level care workers (associate clinicians), health promoters, community health workers, etc. focusing on accessibility, connectedness, health promotion and disease prevention, comprehensiveness, continuity,

and coordination, in the context of families and communities (as described in the Consensus Statement, Rustenburg 2009). Family physicians in Africa take responsibility for specific tasks in the district and in district/community hospitals, and need to be trained accordingly.

The training of family physicians has to take place mainly in an inter-professional PHC-team-context in the district health system. Family physicians share responsibility for training of other health care workers in PHC. Increasingly, PHC will have to address the problems arising in the context of multi-morbidity, and providing appropriate person- and people-centered care. Community oriented primary care (COPC) is an appropriate strategy embraced by African PHC-teams, to address upstream causes of ill-health, including behavioral causes, social determinants, provision of water and sanitation, etc.

The departments and training institutions for FM commit to a socially accountable approach in order to respond to the workforce needs and to the requirements of the health care system. Training in family medicine is based on the acquisition of appropriate knowledge, skills and attitudes in the context of the community, with dominance of community based training in the programmes.

In terms of scaling up FM, a reflection is ongoing on the optimal duration of postgraduate training, that will vary in relation to the relevance of the undergraduate training and contextual factors. One example that inspired the participants was the experience reported by Sudan (Faculty of Medicine of Gezira University and the Ministry of Health), that addresses the needs of the local population through a two-year training programme in the community, supported by e-learning, that involved 200 candidates. This is one example on which we need to reflect in order to develop optimal training programmes in each country. The reflection will include determination of the exact position of procedural skills-learning (surgical, anaesthetic, etc.). These and other topics will be addressed in the

process of mutual learning and exchange in the Primafamed-network.

In order to scale up FM, concrete strategic actions should be developed; including the following:

- (Convince Ministers of Health and of Education, and medical schools that) a significant proportion of the graduates (between 40 and 60 %) should be trained in FM and PHC;
- The existing community service period should be integrated into the training programme of FM, in order to fast track the scaling up at a lower cost;
- Define appropriate content and duration of the training programme in each country;
- Prepare for lifelong learning and develop appropriate Continuous Professional Development.

Essential conditions to make this happen are:

- Ensure that all countries have training in family medicine and establish networks, synergies and collaborations to support African standards;
- Integrate exposure to PHC and FM in the undergraduate curriculum and provide role models for FM;
- Establish well-equipped training complexes for PHC teams (PHC centres and related clinics, with the district hospital for referrals); creating an environment for transformative learning
- Offer sufficient funded posts for residents/registrar;
- Provide appropriate remuneration for family physicians and PHC-teams and attractive career-paths;
- Develop training the trainer programmes, taking advantage of South-South cooperation;
- Increase the budget for PHC;

- Encourage NGOs and donors to invest in strengthening local PHC-systems (www.15by2015.org);
- Implement population-oriented campaigns to promote FM and PHC and stimulate cost effective use of health care services by the population.

If these conditions were fulfilled from today onwards, it is possible to train 30,000 new family physicians and tens of thousands PHC professionals for PHC teams for sub-Saharan Africa by 2020 .

The participants stress that appropriate research in family medicine and primary health care in Africa is essential, in order to substantially enlarge the evidence base for the issues highlighted in this document. This should be facilitated by the provision of specific funding by governments and NGOs, by building research capacity in academic departments of FM and PHC, and by developing an African FM and PHC-research network to support researchers and promote cross-country collaboration.

The delegates from the Primafamed-Network Conference want to engage in a global strategy through dialogue at different levels: local level, the community, stakeholders, provinces, national government (Ministers of Health). Moreover at the international level they call upon the WHO-African regions, African Union, Wonca, MEPI and other organisations to strengthen the commitment to the development of primary health care and family medicine.

By doing so, the delegates are convinced that they can make a difference where it really matters, to contribute to a healthier future for Africa.

At the Primafamed Network-conference 2012 participants were coming from the following African countries: Botswana, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South-Africa, Sudan, Swaziland, Uganda, Zambia, Zimbabwe, Nigeria and from countries from other

continents: Belgium, Denmark, England, Ireland, Norway, The Netherlands, Scotland, USA.

“The data suggest an estimated 10,000-11,000 graduates per year from medical schools in sub-Saharan Africa” (Mullan F et al. Medical schools in sub-Saharan Africa. The Lancet 2011;377:1113-1121) What happens if 50 % of these graduates are from now onwards trained in a 2-years program in Family Medicine?

Please send your comments by email to the following contact: ruschu@yahoo.com. Depending on the readers' interest we shall plan for an open seminar on the way forward which may be most appropriate for “scaling-up” Family Medicine in Lesotho.

DR TITI VIOLET MOHAPI**BORN 29/06/1948 AND PASSED ON 19/09/2012**

A Mother, A Doctor, A Sister, A great Surgeon, An intellectual with immense capacity for acquiring and testing information, a popular teacher has past on.

After a top class academic record her first Degree acquisition was a B.PHARM (University of London) 1971 followed after some practice in the Pharmacy field by another Degree M.D (University of Toronto Medical School) 1978 and fellowship of the Royal College of Surgeons in Glasgow in 1990. Her experience in various places including Zimbabwe, Ethiopia, and U.S.A California prepared her for the many outstanding accomplishments in the field of medicine and life.

She was President of Medical Association 1998-1999 and President of the confederation of African Medical Associations and societies (CAMAS) 1998-1999. Visiting faculty (Gross Anatomy) Mchary Medical College, Nashville Ten. USA 1996-1997. Consultant Surgeon (first Lady in Lesotho) in Queen II Hospital and Maseru Private Hospital since 2007. Consultant and Head of Department of Surgery at Queen `Mamohato Memorial Hospital. President of the Breast Cancer Association of Lesotho.

At the time of passing on she was still a very active member of Lesotho Medical Association and Lesotho Medical Dental and Pharmacy council and indeed a very exemplary, professional very strict on Ethics who had made a difference to many in her short life time that will be missed.

BY:

`MUSI MOKETE MD

DR THABO CHARLES MAITIN

11/03/1933—16/05/2012



After a brilliant/degree academic record of first classes in Junior, and High Schools, he obtained a Bsc (Rhodes University) 1954 and MB.CHB degree (Natal University) 1960 followed by Dip. Mid COG 1973 and then MRCOG (UK) 1980 and FRCOG (UK) 1993.

An all rounder sports man (athletics, tennis, cricket, football, golf) he excelled with records.

Following his academic achievement he practiced in Maseru, Lesotho, eventually after the usual stints in the districts. He was an excellent Gynaecologist and obstetrician and the first Lesotho had.

A good mentor and teacher for the younger colleagues and very pleasant and sociable to all those who met him. However, as his background shows, he was a man of very high and demanding standards with no compromises hence as a member and eventually president of Lesotho Medical, Dental and Pharmacy Council 1986-1991, his major task, unpopular sometimes for those who preferred mediocrity, was to adhere to high standards matching internationally accepted ethics.

A good family man who bore the loss of his dear wife with dignity as well as that of his eldest son subsequently, he is survived by his Attorney daughter, his colleague son (Gynaecologist and obstetrician) his colleague daughter in law (Medical Practitioner) and a grand daughter.

Medical Fraternity and the former ever grateful clients, sports colleagues and all who knew him will miss him, for all his iconic endeavours.

By:

MUSI MOKETE M.D