



UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

**OFFERING HYSTERECTOMIES TO HIV POSITIVE WOMEN WITH PERSISTENT
PRECANCEROUS LESIONS IN RESOURCE-LIMITED SETTINGS LIKE SOUTH
AFRICA IN ORDER TO PREVENT DEVELOPMENT OF CERVICAL CANCER**

by

DR MARIA DENA

(u17379492)

Submitted in fulfilment of the requirements for the degree

MPhil in Medical Law and Ethics

In the Faculty of Law,
University of Pretoria

08 April 2019

SUPERVISOR : PROF PA CARSTENS

Dedication

I take this opportunity to dedicate this mini- dissertation to my mother and to my late father for the discipline and the foundation of academics that they have instilled in me.

Acknowledgments

I wish to make a special mention of Professor Pieter Carstens and Dr. William Oosthuizen for the encouragement and support throughout the preparation of this work.

Many thanks to Eddie Motlapema for assisting me with editing and reviewing this work.

To my three children, Amani, Imani and Harmony, I thank you for your patience.

Declaration

1. I understand what plagiarism is and am aware of the University's policy in this regard.
2. I declare that this dissertation is my own original work. Where other people's work has been used (either from a printed source, Internet or any other source), this has been properly acknowledged and referenced in accordance with departmental requirements.
3. I have not used work previously produced by another student or any other person to hand in as my own.
4. I have not allowed, and will not allow, anyone to copy my work with the intention of passing it off as his or her own work.

SIGNATURE :

Abstract

Cervical Cancer is a preventable disease. Sadly it is a cause morbidity and mortality of women in poor socio-economic settings worldwide, largely due to avoidable factors. This amounts to a gross violation of the rights to life and access to healthcare of vulnerable populations of women. Awareness, sensitisation and mobilisation of the civil society could be crucial in influencing change in political will and healthcare policies to address the needs of HIV infected women, in particular, given their susceptibility to the development of cervical cancer. This work advocates for the South African government to further commit resources towards the prevention of cervical cancer, including hysterectomy in women at high risk of developing cervical cancer before it ensues.

Table of Contents

Chapter 1

Introduction

No	Item	Page No
1.	Research Problem.....	1
2.	Assumptions.....	2
3.	Research Questions	2
4.	Study Objectives and Limitations.....	3
5.	Definitions of Terms and Abbreviations.....	4
6.	Motivation.....	6
6.1.	Background.....	6
6.2.	Preliminary Literature Review.....	6
6.2.1.	HIV Epidemic in South Africa.....	15
6.2.2.	HIV in Women.....	15
7.	Methodology.....	16
8.	Structure.....	17
9.	Conclusion.....	18

Chapter 2

Cervical Cancer and Rights of Women

1.	Introduction.....	19
2.	Legal Aspects and Human Rights.....	20
2.1.	A Human Rights Issue?	20
2.2.	Reproduction Rights and Cervical Cancer.....	22
3.	Policy related Issues and Structures.....	23

3.1.	Political Will.....	23
3.2.	Current Status of Cervical Cancer Screening In South Africa.....	24
3.3.	So where does that leave us?.....	27
3.4.	National Cervical Cancer Prevention and Control Policy.....	29
4.	Conclusion.....	30

Chapter 3

Treatment versus Prevention of Cervical Cancer

1.	Introduction.....	32
2.	Problems of Cervical Cancer Screening in South Africa.....	32
3.	Monitoring/Screening of Women with HIV.....	34
4.	Incidence of Pre-cancerous Cervical Lesions in South Africa: are we keeping Statistics?.....	34
5.	National Cancer Registry and making Cancer a notifiable Disease.....	36
6.	Education and Prevention of Cervical Cancer.....	38
7.	Prevention of Cervical Cancer.....	38
7.1.	Prevention of Cervical Cancer Strategies.....	40
7.2.	Vaccination.....	41
7.3.	Poverty and HIV/HPV.....	42
7.4.	Gender Based Violence and HIV/HPV.....	43
8.	Conclusion.....	45

Chapter 4

The Financial and Clinical Effectiveness of Hysterectomy

1.	Introduction.....	46
2.	Are Hysterectomies a feasible and Sustainable Option?.....	46
3.	Access to targeted Screening for HIV infected Women.....	47
4.	Alternatives to Conventional Cytology.....	47
5.	Management of Cervical Cancer.....	48
6.	Cost of Treating Cervical Cancer versus Cost of Hysterectomy.....	50
6.1.	Patent Rights Reform.....	52
7.	Conclusion.....	55

Chapter 5

Recommendations and Conclusion

1.	Introduction.....	56
2.	Recommendations.....	56
2.1.	Recommendation one.....	56
2.2.	Recommendation two.....	57
2.3.	Recommendation three.....	57
2.4.	Recommendation four.....	57
2.5.	Recommendation five.....	58
3.	Implementation of Awareness Programs.....	58
4.	Dealing with Poverty and Related Problems.....	58
5.	Conclusion.....	59
	BIBLIOGRAPHY.....	60

CHAPTER 1

INTRODUCTION

1. Research Problem

In South Africa, women have a one- in- three lifetime risk of developing cervical cancer.¹ After breast cancer, cervical cancer is the second most prevalent cause of untimely death among women.² Closer to this incident of cervical cancer, South Africa experiences one of the fastest expanding burdens of HIV in the world.³ According to UNAIDS, “South Africa has the largest HIV epidemic in the world, with 19% of the global number of people living with HIV, 15% of new infections and 11% of AIDS related deaths.”⁴ Women, from across a wider spectrum of socioeconomic categories, form the largest percentage of these infected population.⁵ As it will be observed in this research, a considerable number of studies from sub-Saharan Africa confirm connections between the prevalence of HIV infection and cervical cancer incidents. It therefore logically follows that successful strategies to prevent cervical cancer in South Africa should be coupled with HIV screening.

South Africa’s department of health upgraded its policy in relation to the treatment of cervical cancer and replaced it with the prevention and control orientated one, signed by the minister of health in June 2017, having identified cervical cancer and maternal

¹ L. Denny, Cervical cancer in South Africa: An overview of current status and prevention and strategies, *CME* February, Vol.28 No. 2, (2010), 70 – 73.

² L. Denny, (2010), 70 – 73. Soung Min Kim, Human papilloma virus in oral cancer, *Journal of Korean Association Oral Maxillofacial Surgery*, No. 42, (2016), p 327.

³ L. Denny, (2010), 70 – 73.

⁴ United Nations Programme on HIV/AIDS (UNAIDS).
<http://www.unaids.org/en/regionscountries/countries/southafrica>. Accessed on 16 February 2019.

⁵ United Nations Programme on HIV/AIDS (UNAIDS).
<http://www.unaids.org/en/regionscountries/countries/southafrica>. Accessed on 16 February 2019.

deaths national priorities in South Africa. Though noble, the strategies for prevention of cervical cancer (being either at the primary, secondary and tertiary level), are severely and immediately limited mainly by health infrastructure, lack of access to health care facilities, lack of trained healthcare workers, financial incapacity, poverty and lack of patient knowledge and understanding.⁶ In addition, the suggested measures will take time to implement while the carnage, suffering and death continue. Urgent and targeted measures by government therefore need to be taken should we save the lives of women identified at high risk of cervical cancer, by eradicating the risk through implementation of prophylactic hysterectomy for women that have completed their families. This can be achieved through combined mobilization of private and public sectors existing resources, health infrastructure and healthcare personnel by working synergistically and maximally utilizing any and all infrastructure and avenues available.

This dissertation aims to critically enquire as to whether it wouldn't be just to offer hysterectomies to HIV positive women in resource-limited settings like South Africa in order to prevent the development of cervical cancer. It further assesses how poor uptake of cervical cancer screening and treatment strategies has resulted in the increment of cervical cancer, particularly among women who are infected with HIV.

2. Assumptions

- 2.1. Cervical cancer is a major cause of mortality in HIV positive women, whose life expectancy is increased with the use of antiretroviral treatment.
- 2.2. The prevalence and incidence of cervical cancer is higher in HIV positive women.
- 2.3. HIV positive women have higher incidence of precancerous lesions.
- 2.4. The development of precancerous and cancerous lesions in HIV positive women is largely a function of persistent HPV infections.

⁶ SC Mohapatra and P Sengupta, Health Programs in a Developing Country - why do we Fail? *Health Systems and Policy Research* Volume. 3 No. 3: 27, (2016), p 1.

3. Research Questions

- 3.1. Can the prevention of cervical cancer be achieved through the available resource strained settings in South Africa?
- 3.2. Are women living with HIV and cervical cancer equally entitled to enjoy their right to health care as contained in section 27 of the Constitution, and subsequently the rights to dignity and life?
- 3.3. Would the performance of hysterectomy for women with precancerous lesions prevent the development of cervical cancer?
- 3.4. Would the performance of hysterectomy among HIV positive women lead to the violation of their right to bodily integrity as contained in section 12(2)(b) of the Constitution's reproductive rights?
- 3.5. Would prioritization of hysterectomy among HIV infected women result in effective use of resources by the South African government?

4. Study Objectives and Limitations

Women who live with HIV are at increased risk of developing cervical cancer.⁷ From the author's experience as a medical practitioner, given the difficult circumstances that these women find themselves in, their plight is compounded by the humiliating complications of advanced disease and the treatments that they have to undergo. Once cancer has set in, medical and surgical interventions, including palliative care, serve to prolong the inevitable. Public awareness campaigns are necessary for education and primary prevention of this disease.

This dissertation aims at critically exploring the extent to which the South African government could channel resources in an effective manner so as to enhance the protection of the Constitutional rights of women who are HIV infected and at high risk of developing cervical cancer. These rights include: the right to health care as contained in

⁷ Rahel G. Ghebre *at al*, Cervical cancer control in HIV-infected women: Past, present and future, *Gynecologic Oncology Reports* No. 21, (2017), p 101.

section 27(1)(a); the right to human dignity as contained in section 10; the right to privacy in section 14; and the right to life in section of 11. This exploration will make use of legal instruments: that is legislation, cases and various authors' arguments that are relevant to the topic at hand. Furthermore, this work will take into consideration the medical findings on the treatment of HIV positive women who are suffering from cervical cancer. The critical analysis in this dissertation also makes comparison of medical findings of the outcomes of hysterectomy as opposed to other treatments such as chemotherapy and radiation.

5. Definitions of Terms and Abbreviations

- **AIDS – Acquired Immune Deficiency Syndrome.** It is a condition in which the immune system of the human body loses the ability to fight off infections and other diseases.⁸
- **ART – Anti-Retroviral Treatment.** The management and care of a patient; or the combating of a disease or disorder.⁹
- **CIN – Cervical Intraepithelial Neoplasia.** Refers to cellular changes in the uterine cervix preceding invasive stages of cervical cancer. The CIN grading system distinguishes three stages: CIN 1 (mild dysplasia); CIN 2 (moderate dysplasia); and CIN 3 (severe dysplasia).¹⁰
- **DHIS – District Health Information System.** It is the system “developed to collect aggregated routine data from all public health facilities in a country.”¹¹ This system, used in developing countries mostly in Asia and Africa “is intended to support decentralised decision making and health service management.”¹²

⁸ HIV/AIDS and The Law, A resource manual 2nd Edition (2001), p 10.

⁹ Definition available on: <https://medical-dictionary.thefreedictionary.com/treatment>. Accessed: 27 October 2018.

¹⁰ Oxford Concise Medical Dictionary 9th Edition (2015).

¹¹ A. Gribb *at al*, An evaluation of the District Health Information System in rural South Africa, *South African Medical Journal*, (2008), p 549.

¹² A. Gribb *at al*, (2008), p 549.

- HIV – **Human Immuno-Deficiency Virus**. HIV is a virus found in humans that destroys the body’s immune system (its defence against infections and diseases).¹³
- HPV – **Human papillomavirus**. “A type of virus that can cause abnormal tissue growth (for example, warts) and other changes to cells. Infection for a long time with certain types of HPV can cause cervical cancer. HPV may also play a role in some other types of cancer, such as anal, vaginal, vulvar, penile, and oropharyngeal cancers. Also called human papillomavirus.”¹⁴
- Hysterectomy – The surgical removal of the uterus through an incision in the abdominal wall (total abdominal hysterectomy, TAH), or through the vagina (vaginal hysterectomy) or by minimal access (laparoscopic abdominal hysterectomy, LAH).¹⁵
- ICC – **Invasive Cervical Cancer**. “Cancer that has spread from the surface of the cervix to tissue deeper in the cervix or to other parts of the body.”¹⁶
- LLETZ – **Large loop excision of the transformation zone**: a procedure for treating premalignant conditions of the cervix, including carcinoma in situ (CIN 3; see cervical intraepithelial neoplasia), that is performed under colposcopy surveillance after application of local anaesthetic to the cervix.¹⁷
- Prophylactic Hysterectomy: entails removal of the uterus and cervix prior to the clinical occurrence of cancer.¹⁸

¹³ M.R. Galloway, *HIV/AIDS and The Law, A resource manual* 2nd Edition (2001), p 10.

¹⁴ National Cancer Institute. Accessed: <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/hpv>. Accessed: 16 February 2019.

¹⁵ Oxford Concise Medical Dictionary 9th Edition (2015).

¹⁶ National Cancer Institute. <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/invasive-cervical-cancer>. Accessed: 16 February 2019.

¹⁷ Oxford Concise Medical Dictionary 9th Edition (2015).

¹⁸ A.J. Lowery and K.J. Sweeney, The Role of Prophylactic Oophorectomy in the Management of Hereditary Breast & Ovarian Cancer Syndrome, (2012), p 345. *Department of Surgery, National University of Ireland Galway*.

6. Motivation

6.1. Background

Like all fundamental rights entrenched in the Constitution, the right of access to health care services flows from the right to life. In other words, when such rights are limited, they impede the realization of fruitful living of those affected. Women who are infected with HIV equally deserve to have their right to lead flourishing and fulfilling lives protected “through legislative and other means”.¹⁹ Put narrowly, the resources that the state uses to place HIV infected women on various treatments when they develop cervical cancer could be reprioritised to bring about more acceptable outcomes. Section 27(2) of the Constitution actually instructs the state to progressively work on the realisation of the right to health care services. The rationale for this instruction is so that the quality of lives of all citizens could ultimately be improved, which includes eliminating the risk of cervical cancer in HIV infected women.

6.2. Preliminary Literature Review

The development of cancerous cells in the cervix and HIV share many risk factors.²⁰ For this reason, it is submitted that it would be better to advocate for the removal of the cervix in HIV infected women with persistent precancerous lesions in order to eliminate the risk of the development of cancerous tumours. The campaign to eliminate the possibility of developing cervical cancer in HIV positive women aims at ensuring that these women do not suffer multiple hardships, which usually subject them to lifetime medical treatments and ultimately premature death. Long term cervical cancer therapy is stigmatising and predisposes patients to discrimination and further depraves them of their fundamental human rights. So the move to perform hysterectomy on HIV infected women is not only a medical project, but it has the plausible results of protecting the human rights and interests of the said patients.

¹⁹ See section 27(2) of the Constitution.

²⁰ Williams FS *et al* Treatment of cervical carcinoma in situ in HIV positive women, (2000), p 136. *International Journal of Gynecology & Obstetrics* Volume 71.

In the discussion about the allocation or prioritisation of public resources, there are often disagreements on what matters the most. However, often times the discussion should not even be about the competing public interest, but rather on how to strategize in order to progressively address all public interests and needs. Equally, in the discussion at hand, the argument is not about raising fresh funds in order to achieve these goals, but rather use the available and often very scarce resources in an effective manner.

As observed by Cain *et al*, “Cervical cancer takes the lives of more than 250 000 women each year globally, particularly in under-resourced areas of low-, middle-, and high-income countries” globally.²¹ Lack of treatment resources is one of the reasons why 50% of the half of a million cases of cervical cancer results in mortality.²² Although cervical cancer “usually affects women in the fifth and sixth decades of life,” it has also “been found to be more prevalent in the fourth decade of life for human immunodeficiency-virus (HIV)-infected women.”²³ In view of this observation, one can argue that there is a need for the South African government to formulate pro-life saving policies in treatment of women diagnosed with cervical cancer. In South Africa, for example, the normal treatment consists of radiation and chemotherapy, which is a very expensive relative to the resources available. However, it has been found that performing hysterectomy on women who are HIV infected significantly reduces the risk of development of cervical cancer.²⁴

South Africa has one of the highest expanding burden of HIV in the world.²⁵ It is estimated that 7.03 million people are currently living with HIV, of whom 60% are

²¹ Cain JM *et al*, Control of cervical cancer: Women's options and rights, (2009), p 341. *International Journal of Gynecology and Obstetrics*.

²² M Moodley “Cervical Cancer in Southern Africa: The challenges, (2009), p 11. *South African Journal of Gynaecological Oncology*, Volume 1, No 1.

²³ Moodley (2009), p 11.

²⁴ Garg S Management of Evasive Cervical Cancer After Simple Hysterectomy (2004), 367 - 371. *Journal of Obstetrics and Gynaecology India* Volume 54, No 4.

²⁵ Global Aids Update 2016, UNAIDS, page 3. Available on: www.afro.who.int.org. Accessed on 23 October 2017.

women.²⁶ Several studies from sub-Saharan Africa have shown associations between HIV infection and cervical cancer. African women in South Africa are in a particularly vulnerable for cervical cancer, mainly due to poor socio-economic status and HIV, which places them at a 5-fold increased risk of cervical cancer than the general population.²⁷ It therefore logically follows that successful strategies to prevent cervical cancer in South Africa should be coupled with HIV screening.

South Africa adopted a national cervical cancer screening policy in 2002 aimed at preventing cervical cancer using strategies that were highly successful in high income countries such as the UK and the USA.²⁸ The goal was to use pap smears to reach 70% of women within ten years.²⁹ But by 2014, only 14% had been reached, showing the testing method to be a failure.³⁰

Prophylactic hysterectomy not only eliminates the lifetime risk of cervical cancer but also reduces the burden of lifetime screening on an already overburdened healthcare system. Hysterectomy should not only be reserved for treatment of patients with early stages of cervical cancer but also to prevent cervical cancer in high risk patients. In this regard, staging and management of cervical cancer in South Africa should incorporate hysterectomy for persistent precancerous lesions in high risk patients and not only for patients with confirmed cervical cancer.

Though prophylactic hysterectomy in high risk patients would go a long way in actualizing their constitutional right to life, it should be carefully tempered with the rights to reproductive health, the right to bodily integrity and the right to equality under the law. The cost to the state and society of wasted lives, expensive oncology and palliative care

²⁶ Statistical Release: Mid-year Population Estimates, p 1. Available on: www.statssa.gov.za. Accessed on 23 October 2017.

²⁷ South African HIV Survey, p XXIV. Available on: www.hsrc.ac.za. Accessed on 24 October 2017.

²⁸ Masukume G, Cervical Cancer tests too expensive. Available on: <https://www.wits.ac.za/news/latest-news/general-news/2015/2015-07/cervical-cancer-too-expensive.html>. Accessed on 18 October 2017.

²⁹ Masukume (2017).

³⁰ Masukume (2017).

and lifetime follow-up should be weighed against costs of disease eradication through prophylactic hysterectomy.

South Africa's health minister, Aaron Motsoaledi, has referred to the period of South Africa's inaction on HIV/AIDS as the lost decade.³¹ Simply put, South Africa is at risk of having another lost decade with cervical cancer if it does not change its approach soon.

As Dryden-Peterson puts it, "[e]ven in the context of good access to and use of ART, HIV infection more than doubled the risk of death among women who received curative guideline-concordant therapy. Competing mortality from HIV-associated infections seemed to contribute minimally to the excess risk of death; rather, earlier oncologic progression among women with HIV seemed to account for the excess mortality."³²

Yasmin Adam reports that, "[p]redictors of persistent cytological abnormalities after treatment of cervical intraepithelial neoplasia in Soweto: a cohort study in a high HIV prevalence population'. This report shows "extremely high rates of persistence of cervical intraepithelial lesions in HIV infected women and in women with disease at the excision margins following LLETZ. This warrants more intensive follow up of women with margins involved by CIN, and especially women who are HIV infected."³³

Jordan *et al* note that, "Cancer of the cervix is preventable but remains one of the most common cancers among women in South Africa. It is the most prevalent cancer among African women, who account for about 80% of the country's female population. It is also the most common cancer affecting women between the ages of 15 and 45. Every year, more than 4000 women die of cervical cancer in South Africa."³⁴

Recommendable treatments of cervical cancer should include the screening of cervix. "Screening for cervical cancer involves identifying abnormalities on the cervix, the

³¹ Masukume (2017).

³² Dryden-Peterson S, *et al*, HIV Infection linked with death from Cervical Cancer (2016) August. *Journal of Clinical Oncology*.

³³ Adam Y, *et al*. *Cancer* (2008), p 7. BMC 8:211.

³⁴ Jordan S *et al*, A Review of Cervical Cancer in South Africa: Previous, Current and Future (2016), p 1. *Health Care Current Reviews* 2016, Volume 4:4.

mouth of the womb that could develop into cancer in the future. These pre-cancerous abnormalities are then treated to reduce the chances of them developing into cancer.”³⁵

Masukume observes that, “Zambia, Botswana and Zimbabwe introduced very different screening and treatment methods on a wide scale between 2006 and 2010 that could all be done during one visit to a healthcare worker or clinic. These are paying starting to pay off, with over 100,000 women screened for cervical cancer in Zambia over seven years. Of the women who were screened, 20% had early signs of cervical cancer and close to 90% received same day service.”³⁶

Denny *et al* hold that, “HPV vaccination of school girls prior to sexual debut should have significant impact on the incidence of mortality from cervical cancer. However, this reduction in invasive and pre-invasive lesions will only be seen in the next 20 to 40 years”.³⁷ Fonn also reports that, “The national policy on cervical screening, part of the National Cancer Control Programme for South Africa, indicates that all women over the age of 30 should be screened with repeat smears, to a total of 3 smears, at 10-year intervals.”³⁸

Denny *et al* further report that, “HPV vaccination of school girls prior to sexual debut should have significant impact on the incidence of mortality from cervical cancer. However, this reduction in invasive and pre-invasive lesions will only be seen in the next 20 to 40 years.”³⁹

³⁵ Jordan *et al* (2016), p 1.

³⁶ Masukume L, Failure to set up affordable cervical cancer tests costs South Africa. Available on: <http://theconversation.com/failure-to-set-up-affordable-cervical-cancer-tests-costs-south-africa-43378>. Accessed on: 20 October 2017.

³⁷ Denny L *et al*, Human Papillomavirus-Based Cervical Cancer Prevention: Long-term Results of a Randomized Screening Trial (2010). *Journal of the National Cancer Institute*, Volume 102, no. 20.

³⁸ Fonn S, Human Resource Requirements for Cervical Screening – who do we need where? (2003), p 91. *South African Medical Journal*, Volume 93, No. 12.

³⁹ Denny *et al* (2010), p.

In the context of lack of adequate infrastructure and human resources in the public health, the efforts to prevent of cervical cancer remain futile.⁴⁰ Prevention measures against cervical cancer should include primary prevention. That said, “[t]he aim of primary prevention is to prevent the initiation of cervical carcinogenesis and thus avoid occurrence of cervical cancer. Knowledge of the causes and co-factors that increase the risk of dis-ease is vital for effective primary prevention strategies.”⁴¹

On the question of resources, Carstens and Pearmain acknowledge that, “[t]he rationing of health care services is a complex subject that embraces many more areas than just that of law. It is implicit in a world of limited resources and often explicit in decisions involving the allocation of resources.”⁴² Here, the above authors hold that the discussion on the allocation of resources is shared among other areas of the law such as contract, administrative and delict, and not under the exclusive control of Constitutional law. Carstens and Pearmain further assert that:

*“Rationing and access (to resources) are two sides of the same coin. Rationing, properly applied, can improve access at a certain level since it can ensure more equitable distribution of resources so as to include people who previously had no access at all. However, it clearly has the potential to reduce access to and whether or not this is a good thing depends a great deal on the values and beliefs of the society in which it is effected.”*⁴³

In the context of the view by Carstens and Pearmain, it is understood that the allocation of resources towards health care service is effected in terms of the South African values and beliefs as contained in the Constitution. To be more specific for the purposes of the topic at hand, the discussion has to be narrowed towards the health care rights of women infected with HIV. In other words, these women’s right to health care can only

⁴⁰ Sankaranarayanan R *et al*, Infrastructure Requirements for Human Papillomavirus Vaccination and Cervical Cancer Screening in Sub-Saharan Africa, (2013), p F47 – F48. *Vaccine* 31S.

⁴¹ Sankaranarayanan *et al* (2013), F48.

⁴² P. Carstens and D. Pearmain *Foundational Principles of South African Medical Law* (2007), p 118.

⁴³ Carstens and Pearmain (2007), p 118. The brackets contain the Author’s emphasis.

be limited in terms of section 36 of the Constitution which requires that “limitations of rights may be justifiable only if they are authorised by law of general application”⁴⁴

South Africa is the only sub-Saharan country “with an established national screening program, aiming for 70% coverage with cytology.”⁴⁵ However, even in South Africa, “widespread coverage has not been attainable, reflecting the operational challenges of cytology-based programs.” There other alternatives to cytology-based screening, which include HPV DNA testing and visual inspection of the cervix using acetic acid (VIA), and this alternatives have so far proven to be effective and potentially cost-effective in low-resource settings, “allowing for fewer follow-up visits (e.g., screen-and- treat approaches with VIA or newer HPV tests) and automated processing of laboratory specimens, reducing resource and quality control requirements.”⁴⁶ However, these alternatives do not necessarily save patients and the state the cost of treatments and time spent attending treatment sessions. In addition, human resources in the form of health care professionals would progressively be channelled into other health care needs if cervical cancer was to be successfully completely prevented.

According to the World Health Organization, successful cervical cancer screening programs requires: over 80% coverage of appropriate management and follow-up of patients with positive tests; effective links between screening diagnosis and treatment services; and high quality care and adequate resources.⁴⁷ Urgent and targeted measures by government therefore need to be taken if we should save the lives of women identified at high risk of cervical cancer by eradicating the risk through implementation of prophylactic hysterectomy.

In the quest to ensure proper prevention of cervical answer in women infected with HIV, health care professionals still need to adhere to professional standards and ethics in

⁴⁴ Carstens and Pearmain (2007), p 120.

⁴⁵ J.J. Kim *et al*, Vaccine 31S (2013), Model-Based Impact and Cost-Effectiveness of Cervical Cancer Prevention in Sub-Saharan Africa, p F60.

⁴⁶ Kim, 2013, p F60.

⁴⁷ Cervical Cancer Screening in Developing Countries: Report of a WHO Consultation, p 5. Available on: http://www.who.int/cancer/media/en/cancer_cervical_37321.pdf. Accessed on: 25 October 2017.

order to avoid violation of the said group of women's rights. For example, as Carstens and Pearmain outline, "[t]he physical examination of a person in health care context is very much an invasion of privacy and such examination can only be lawfully conducted if that person waives his right to privacy for the purpose of examination."⁴⁸ On the same note, our law fundamentally respects the rights of a patient as an individual "and to a large extent" an individual can determine his own fate.⁴⁹ In other words, doctors are compelled to respect the rights of patients, even though their exercise of such rights could lead to fatal consequences of such patients.

It is observed that communicable diseases such as tuberculosis, human immunodeficiency virus (HIV), acquired immunodeficiency syndrome (AIDS), maternal mortality and malaria receive the most attention in terms of the burden of disease in Africa.⁵⁰ However, it seems that cancer is largely under-recognized as a significant health problem.⁵¹ Despite this, the burden of cancer is increasing in sub-Saharan Africa.⁵² Invasive cervical cancer (ICC) is the most common cancer diagnosed in women in Sub Saharan Africa.⁵³

Recent studies show that people living with HIV are at a sharply increased risk of several types of first and second primary cancers as compared with the general population. Even in the era of effective antiretroviral therapy, research shows that HIV-related cancer is on the rise. This is because people living with HIV are living longer, and are getting older. Surviving longer means a longer latency period for cancer-linked

⁴⁸ Carstens and Pearmain (2007), p 32.

⁴⁹ S.A. Strauss *Doctor, Patient and the law* (1991), p 19.

⁵⁰ A. Jemal *et al*, cancer burden in Africa and opportunities for prevention. *Cancer*, September 15, (2012), p p 4372.

⁵¹ Jemal *et al*, (2012), p 4372.

⁵² Jemal *et al*, (2012), p 4372.

⁵³ M.P. Curado, *Cancer Incidence in Five Continents*, Vol. IX, International Agency for Research on Cancer, (2007).

viruses such as human papilloma virus (HPV) as well as more extended exposure to behavioural risk factors such as drinking alcohol and smoking.⁵⁴

It is the author's experience as the a practising gynaecologist that most health care providers are aware that women living with HIV may be at increased risk of invasive cervical cancer (ICC) and should as such be vigilant with screening for that disease. The fact that ICC is always preceded by long 'latency' periods during which precancerous lesions can be detected and treated successfully means that "there are ways to stop this disease from developing."⁵⁵ The primary step "is to find and treat precancers before they become true cancers, and the second is to prevent the precancers."⁵⁶ Hysterectomy was the preferred "treatment for women CIN3 lesions up until the 1970's."⁵⁷ "This surgery requires general anaesthetic and hospitalization for several days and is associated with significant Morbidity."⁵⁸ Hysterectomy has since been replaced by day-procedures such as LEEP/LLETZ and cryotherapy.⁵⁹ Both do not require hospitalization and are associated with significantly less morbidity.⁶⁰ Screening, facilities and expertise are required for safe and effective treatment of patients needing these services.⁶¹

⁵⁴ Kristen B. Pytynia *et al*, *Epidemiology of HPV-associated oropharyngeal cancer*, *Journal of Oral Oncology*, No. 50 (5), (May 2014), 380 – 386.

⁵⁵ American Cancer Society. <https://www.cancer.org/cancer/cervical-cancer/causes-risks-prevention/prevention.html>. Accessed on: 16 February 2019.

⁵⁶ American Cancer Society. <https://www.cancer.org/cancer/cervical-cancer/causes-risks-prevention/prevention.html>. Accessed on: 16 February 2019.

⁵⁷ Philip E. Castle *et al*, *Treatment of cervical intraepithelial lesions*, *International Journal of Gynaecology and Obstetrics*, No. 138 (Suppl. 1), (2017), p 21.

⁵⁸ Castle *et al*, (2017), p 21.

⁵⁹ Castle *et al*, (2017), p 21.

⁶⁰ Castle *et al*, (2017), p 21.

⁶¹ Morbidity and Mortality Stats-CACx in SA.

6.2.1. HIV Epidemic in South Africa

South Africa has the biggest and most high profile HIV epidemic in the world, with an estimated 7.1 million people living with HIV in 2016. South Africa also accounts for a third of all new HIV infections in Southern Africa.⁶² In 2016, there were 270,000 new infections and 110,000 South Africans died from AIDS related illnesses. South Africa has the largest antiretroviral treatment program in the world and these efforts have been largely financed by its own domestic resources.⁶³ In 2015, the country invested more than \$1.34 billion to run its HIV programs.⁶⁴ The success of this ART Programme is evident in the increases in National life expectancy, rising from 61.3 years in 2010 to 67.7 years in 2015.⁶⁵

6.2.2. HIV in Women

It is well known that HIV infection increases the risk for HPV acquisition, as well as the risk for development of cervical cancer. Women infected with HIV had a higher incidence and prevalence of HPV, higher viral loads as well as increased risk of persistent infection with HPV. They also have higher risk of infection with multiple HPV subtypes, greater prevalence of oncogenes subtypes, higher prevalence of cervical cancer precursors, and a faster progression rate to more severe lesions, including invasive cervical cancer. In addition, recurrent abnormalities after treatment of precursor lesions are more common. Hence these women have higher risk of death from cervical cancer. Since the start of the global HIV epidemic, women have been disproportionately affected by HIV in many regions.⁶⁶ Women constitute more than half of all people living

⁶² UNAIDS, Ending AIDS: Progress towards 90-90-90 targets, (2017), p 105.

⁶³ UNAIDS, Ending AIDS: Progress towards 90-90-90 targets, (2017), p 105

⁶⁴ UNAIDS, Ending AIDS: Progress towards 90-90-90 targets, (2017), p 105

⁶⁵ South African National AIDS Council (SANAC) (2017) 'Let our actions count: National Strategic Plan, (2017-2022), p xi.

⁶⁶ UNAIDS, Ending AIDS: Progress towards 90-90-90 targets, (2017), p 24.

with AIDS-related illnesses, including cervical cancer, remain the leading cause of death for women of reproductive age.⁶⁷

Young women (15–24 years), and adolescent girls (10 – 19 years) in particular, account for a disproportionate number of new HIV infections.⁶⁸ In 2016, new infections among young women aged (15–24) were 44% higher than men their age. In eastern and Southern Africa, young women made up 26% of HIV infections despite only accounting for 10% of the population.⁶⁹ This means that approximately 7500 young women across the world acquire HIV every week.⁷⁰ In Eastern and Southern Africa young women acquire HIV five to seven times earlier than their male peers.⁷¹ In 2015, there were on average 4,500 new infections among young women every week, double the number in young men.⁷²

In South Africa, HIV prevalence among young women is nearly four times greater than that of men their age.⁷³ Young women between the ages of 15 and 24 made up 37% of new infections in South Africa in 2016.⁷⁴

7. Methodology

This work is a critical analysis of the approach utilized by South Africa's health system towards the treatment and prevention of cervical cancer. Although this research uses some statistical data in order to motivate specific arguments, it is not in itself an empirical

⁶⁷ UNAIDS, *Ending AIDS: Progress towards 90-90-90 targets*, (2017), p 95.

⁶⁸ UNAIDS, *Ending AIDS: Progress towards 90-90-90 targets*, (2017), p 44.

⁶⁹ UNAIDS, *Ending AIDS: Progress towards 90-90-90 targets*, (2017), p 44.

⁷⁰ UNAIDS (2017) 'When women lead change happens: Women advancing the end of AIDS', (2017), p 24.

⁷¹ R.C. Dellar *et al*, 'Adolescent girls and young women: key populations for HIV epidemic control', (2015), p 6.

⁷² UNAIDS, *Prevention Gap Report*, (2016), p 100.

⁷³ Athena, *Integrating strategies to address gender-based violence and engage men and boys to advance gender equality through National Strategic Plans on HIV and AIDS, Impact and Needs Assessments: Overview of Findings* (2012), p 4 – 5.

⁷⁴ M Evans *et al*, *Age-disparate sex and HIV risk for young women from 2002 to 2012 in South Africa*, (2016), p 3.

project. In other words, this dissertation does not employ inductive reasoning. This dissertation refers to works of other authors, case law, reports as well as legislative and policy instruments in order to motivate the arguments and views presented herein.

8. Structure

- **Chapter 1 – Introduction**

This chapter serves as an introductory framework in which the research problem and key concepts are outlined. The work in this chapter also serves as a framework upon which all the other chapters are constructed.

- **Chapter 2 – Cervical Cancer and the Rights of Women**

Chapter 2 critically explores the impact of cervical cancer on the rights of women in relation to health care treatment. This chapter further examines the probability of the violation of the said rights in the context of various tests and treatments that could be suggested or prescribed for women who are infected with HIV.

- **Chapter 3 – Treatment versus Prevention of Cervical Cancer**

This chapter looks at the benefits of prophylactic hysterectomy as a preventative approach against the development of cervical cancer as compared to the treatment of cancer. The aim in this chapter is to demonstrate the need to reprioritise resources in order to achieve quality results in terms of the protection of the rights of women who are infected with HIV.

- **Chapter 4 – The financial and clinical effectiveness of hysterectomy**

In chapter 4, there is a sharp focus on the government's short-comings regarding the commitment of resources for treatment or prevention of cervical cancer. This chapter lays down the arguments in regarding the cost and effectiveness cervical cancer treatment as compared to those of hysterectomy.

- **Chapter 5 – Conclusion**

Chapter 5 summarises the arguments that were laid down in the first four chapters. This chapter also emphasises the major findings of this research.

9. Conclusion

Given the high risk of the development of cervical cancer among women who are HIV positive, it was suggested in this Chapter, that hysterectomy should be administered to this group of women before the said cancer sets in. The risks are reported to be one in three among women in South Africa. It was argued that the government's failure to channel resources towards addressing this problem could be seen as violation of women's rights to healthcare. This Chapter also presented a layout of the facts and arguments for the succeeding chapters.

CHAPTER 2

CERVICAL CANCER AND THE RIGHTS OF WOMEN

1. Introduction

Lack of adequate attention on women issues has tragic and consequences for them and their families, particularly in relation to the full enjoyment of human rights.⁷⁵ It is submitted the “prevention of cervical cancer should be made a priority on national and international political agendas alike.”⁷⁶ This submission is made in light of the fact that the “opportunity to meet this challenge is now greater than ever with new preventive technologies developed for screening and vaccination.”⁷⁷ The United Nations Development Fund for women advices that states need to acknowledge their “moral and legal obligation to respect, protect and fulfil women’s rights to health through ensuring that these medical developments benefit all women, particularly those who need them the most.”⁷⁸ This Chapter looks at the burden of cervical cancer and its impact on the rights of women.

⁷⁵ K. Svensson [Project and Programme Manager, Europe External Policy Advisors (EEPA) – United Nations Development Fund for Women (UNIFEM)]. Preventing cervical cancer: the imperative of women’s right to health Background Paper 3, **Fight against cervical cancer: challenges and opportunities for women’s right to health**, Brussels, September (2007), p 1 – 8. Available on: [http://www.rho.org/files/UNIFEM HPV-Conference BGPaper 3 2007.pdf](http://www.rho.org/files/UNIFEM_HPVC_Conference_BGPaper_3_2007.pdf). Accessed on: 28 October 2018.

⁷⁶ Svensson, (2007), p 1. *Ibid.*

⁷⁷ Svensson, (2007), p 1. *Ibid.*

⁷⁸ Svensson, (2007), p 1. *Ibid.*

2. Legal Aspects and Human Rights

2.1. A Human rights issue?

The right to health is fundamental to the physical and mental well-being of all individuals and is a necessary condition for the exercise of other human rights.⁷⁹ The right to health care services is provided for in the South African Constitution. The provisions encompass access to healthcare services, including reproductive health, emergency services and universal access is provided for in section 27(1)(a) which states that “everyone has the right to have access to health care services, including reproductive health care.” Section 27(1)(b) provides for the State to “take reasonable legislative and other measures, within its available resources to achieve the progressive realization of the right.”

According to the Limburg Principles, progressive realization does not imply that the government can indefinitely defer efforts for full realization of the right. Instead, the government should “move as expeditiously as possible towards the full realization of the right” and are required to device immediate means to provide for minimum fundamental rights.⁸⁰ Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) provides for the “enjoyment of the highest attainable standard of physical and mental health conducive to living a life of dignity”.⁸¹ This means that health care facilities, goods and services have to be available in sufficient quantity; must be

⁷⁹ CESCR (UN Committee on Economic, Social and Cultural Rights) General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12). *Adopted at the Twenty-second Session of the Committee on Economic, Social and Cultural Rights, on 11 August 2000* (Contained in Document E/C.12/2000/4).

⁸⁰ International Commission of Jurists, Limburg Principles on the implementation of the International Covenant of Economic, Social and Cultural Rights (in *Economic, Social and Cultural Rights: @ Compilation of essential Documents* 1977. pp 63-78, at para 22.

⁸¹ Office of the High Commissioner for Human Rights (OHCHR), General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12), *Adopted at the Twenty-second Session of the Committee on Economic, Social and Cultural Rights, on 11 August (2000)*, at para 12.

physically and economically accessible to everyone, must be ethically and culturally acceptable, and must be of medically appropriate quality.⁸²

According to section 27(2) of the Constitution (Section 27(2) of the Constitution of the Republic of South Africa, Act 108 of 1996) the state is obliged to respect, protect, promote and fulfil all the rights in the Bill of Rights. In the case of the right to health, there are four obligations defined with respect to the realisation of the said right, namely: respect for the right; protection of the right; promotion the right; and the imperative to fulfil the right.⁸³

Since 1994 there have been landmark court decisions which have invaluablely enriched the normative content of the right to health care. These cases have shone light to the concepts of “available resources” and “reasonable measures” in terms of section 27(1) (b) of the Constitution. In *Soobramooney v Minister of Health, Kwa-Zulu Natal*,⁸⁴ the Constitutional Court held that the limited resources that the State has at its disposal were constraints to the enjoyment of the rights by the appellants, given the context of socio-economic history of South Africa. In *Government of the Republic of South Africa and Others v Grootboom and Others*,⁸⁵ the Constitutional Court defined the parameters of what constitutes “reasonable measures”. The Court motivated that measures to be reasonable, such measure must include meeting the needs of the most vulnerable groups in society. It further held that reasonable implementation plans would not meet the State’s obligations in terms of section 7(2) of the Constitution.

Another case that dealt with the State’s obligation to attend to the realisation of the right to healthcare is that of *Treatment Action Campaign (TAC) v Minister of Health and*

⁸² General Comment No. 14 of the Committee of ESCR, (2000), at para 12.

⁸³ C. Heyns and G. Bekker, General Comment No. 14, “ Introduction to the Rights Concerning Health Care in the South African Constitution,” in G. Bekker (ed.), *A Compilation of Essential Documents on the Right to Health*, Economic and Social Rights Series, Vol 4, Centre for Human Rights, (2000), pp 14 – 17.

⁸⁴ 1997 (12) BCLR 1696 (CC).

⁸⁵ 2000 (11) BCLR 1169 (CC).

Others.⁸⁶ The TAC matter dealt with the prevention of mother to child transmission of HIV in which the requested that the anti-retro viral drug, Nevirapine be made available to all HIV-infected pregnant women in the public sector.⁸⁷ The Constitutional Court upheld the High Court order to make the drug available to all HIV-infected pregnant women.⁸⁸ This judgment was of great significance given the high prevalence of HIV in the country and the large number of orphans that came about as a result of the scourge of AIDS.

2.2. Reproductive Rights and Cervical Cancer

Chapter 1 of the Constitution contains the founding values that define the South African society. Among these values are: human dignity; the achievement of equality and advancement of human rights and freedom. As per section 9(2) of the Constitution, equality includes full enjoyment of all rights and freedoms. Furthermore, the State may not unfairly discriminate against anyone based on the one or more of the grounds listed in the said section.⁸⁹ It submitted that the right of women to have proper treatment with respect to cervical cancer is also connected to the right to human dignity as contained in section 10 of the Constitution.

Cervical cancer is a cancer of the female reproductive organ.⁹⁰ In light of the impact it has on the dignity of women, the state has to pay attention to its treatment in order to enable every woman to realize right to have and to maintain healthy reproductive organs. Among the complications that come with cervical cancer, there are a number of factors, including the following:

⁸⁶ [2002] ZACC 16; 2002 (5) SA 703; 2002 (10) BCLR 1075.

⁸⁷ *Treatment Action Campaign (TAC) v Minister of Health and Others*, at para 19.

⁸⁸ *Treatment Action Campaign (TAC) v Minister of Health and Others*, at para 135.

⁸⁹ Section 9(3) of the Constitution.

⁹⁰ Cancer Council South Africa, What is Cervical Cancer. Available on: https://www.cancersa.org.au/_/files/information/a-z-index/what-is-cervical-cancer.pdf?print=1. Accessed on: 22 October 2018.

- The cervix cannot be replaced or transplanted once cancer ensues like breast implants *et cetera*, where a malignant lump can be removed and one maintain her breast;
- The cervix cannot be reconstructed or rejuvenated like the vagina;
- Once diagnosed, the patient cannot enjoy normal sexual relations;
- Women with cervical cancer cannot have children;
- Victims suffer severe pain, foul vaginal discharge and abnormal vaginal bleeding;
- Those who get cancer before child bearing are robbed the right to becoming parents or arguably even to marriage.

In light of the above listed problems, women diagnosed with cervical cancer are recognized as one the most vulnerable groups is South Africa.

3. Policy related Issues and Structures

3.1. Political will

By the World Bank's estimation, developing countries account for approximately 84% of global population and approximately 90% of disease burden.⁹¹ However, developing countries have access to less than 20% of the global domestic product (GDP) and approximately 12% of global health expenditure.⁹² This inequity is responsible for the high rate of cervical cancer in developing countries, where no country has managed to either sustain or initiate cervical cancer screening programs.⁹³ It is suggested that while intergovernmental agencies have a role to play, the focus for international public health interventions must shift to make individual governments responsible for their programs

⁹¹ Information available on: <http://siteresources.worldbank.org/INTHSD/Resources/topics/Health-Financing/HFRChap1.pdf>. Accessed: 23 October 2028.

⁹² Information available on: <http://siteresources.worldbank.org/INTHSD/Resources/topics/Health-Financing/HFRChap1.pdf>. Accessed: 23 October 2028.

⁹³ E, Gakifou *et al*, Coverage of cervical cancer screening in 57 countries: Low average levels and large inequalities. PLoS Medicine 2008; 5(6).

and answerable to their people for their choices as to where to spend public funds. As with most public health measures, it is most likely that implementation will require education, dedication and patience.

3.2. Current status of cervical cancer screening in South Africa

Currently, the South African “national cervical cancer prevention programme in the public sector offers three cervical cytology smears per lifetime, starting after the age of 30 at 10-yearly intervals.”⁹⁴ However, cytology based opportunistic screening is well accepted in the private sector as compared to the public sector, though it has to be noted that it is not homogeneously executed.⁹⁵ However the incidence of cervical cancer remains unacceptably high, cases are often diagnosed late, and many patients have poor response to treatment.⁹⁶ Success of HPV-based primary screening for cervical cancer internationally has shown this method to be superior to traditional cervical cytology, hence should replace cytology in the next few years.

A guideline was developed by the World Health Organization (WHO) to consider screening and treatment for cervical pre-cancer in 2013. This guideline provides recommendations for strategies for a screen and treat programme.⁹⁷ Importantly, this guideline takes into consideration women that are HIV-infected and recommends a more aggressive screening strategy to prevent invasive cervical cancer more effectively.

⁹⁴ MH Botha and G Dreyer, Guidelines for cervical cancer screening in South Africa, *Southern African Journal of Gynaecological Oncology*, No. 9(1), (2017), p 8.

⁹⁵ Botha and Dreyer (2017), p 8.

⁹⁶ Botha MH, Richter KL. Cervical cancer prevention in South Africa: HPV vaccination and screening both essential to achieve and maintain a reduction in incidence. *South African medical journal* 105(1), 2015, 33 – 34.

⁹⁷ World Health Organisation, Guidelines for Screening and Treatment of Precancerous Lesions for Cervical Cancer Prevention, Geneva (2013).

Available on: http://apps.who.int/iris/bitstream/10665/94830/1/9789241548694_eng.pdf. Accessed on: 23 October 2018.

The guideline also provides recommendations for screening in both low and high resources.

In 2005, Roche Diagnostics introduced the formation of a Women's Health Advisory Board with the objective of advancing women's health in South Africa.⁹⁸ This objective is implemented through assessment of information and formulation of guidelines, carried out by its local (South African) HPV Advisory Board.⁹⁹ This Advisory Board was functions in partnership the SASOG (The South African Society of Obstetricians and Gynaecologists) and Roche Diagnostics.¹⁰⁰ Members of the board are drawn from SASOG in terms of their seniority and particular interest in gynaecological oncology.¹⁰¹ The members are also reputable experts in the field, for example senior microbiologists and senior clinical pathologists.¹⁰² The objectives of the board are as follows:¹⁰³

- (a) To formulate recommendations in respect of how the testing for the use of human papilloma virus is to be used and to continuously revise same;
- (b) To encourage and support research on HPV and cancer related tumours in South Africa;
- (c) To facilitate and partake in discussions on policy in relation to the treatment and prevention of cancer; and
- (d) To formulate and actualize strategies in relation to the awareness and education on HPV and cervical cancer.

It is widely accepted that primary prevention through vaccination against infection of specifically high risk HPV provides protection against the most potent carcinogen

⁹⁸ The South African Society of Obstetricians and Gynaecologists. Information available on: <https://www.sasog.co.za/Guidelines/HPVAdvisory>. Accessed: 20 February 2019.

⁹⁹ The South African Society of Obstetricians and Gynaecologists, *supra*.

¹⁰⁰ The South African Society of Obstetricians and Gynaecologists, *supra*.

¹⁰¹ The South African Society of Obstetricians and Gynaecologists, *supra*.

¹⁰² The South African Society of Obstetricians and Gynaecologists, *supra*.

¹⁰³ The South African Society of Obstetricians and Gynaecologists, *supra*.

associated with invasive carcinomas, mainly type 16 (associated with more than 50% of cancers, type 18 (associated with 16%), and type 31 associated with 8%.¹⁰⁴ It is submitted that this can impact positively on the alleviation of the disease as the only cost-effective, at least for now, in the fight against cervical cancer in South Africa where high coverage of screening programs are extremely difficult to obtain.¹⁰⁵ There are three available vaccines for protection against both HPV 16 and 18 types.¹⁰⁶ These two types are responsible for as much as 70% of cervical cancers.¹⁰⁷ “Given that the vaccines which are only protecting against HPV 16 and 18 also have some cross-protection against other less common HPV types which cause cervical cancer, WHO considers the three vaccines equally protective against cervical cancer.”¹⁰⁸ Therefore, it would be a sound idea for the South African to commit its limited resources towards the administration of the abovementioned vaccines in order to prevent the infection of HPV among young women who have not had prior exposure to sexual activities. In view of the abovementioned observation, such HPV vaccination would undoubtedly prevent the development of cervical cancer.

Vaccines against HPV types 16 and 18 are commercially available in South Africa, currently at a cost of +/- R 900 per dose in the private health sector.¹⁰⁹ The recommendable age from which to start administering the HPV vaccination is prior to commencement of sexual activities, being 9 or 10 years of age.¹¹⁰ The vaccine is administered in three separate doses over a period of six months to confer immunity.

¹⁰⁴ K Richter, Paradigm shift needed for cervical cancer: HPV infection is the real epidemic, *South African Medical Journal*, May, Vol. 103, No. 5, (2013).

¹⁰⁵ V Sewram, The Cancer conundrum, Stellenbosch University. Available on: <https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=6210>. Accessed on: 20 February 2019.

¹⁰⁶ World Health Organization. Available on: [https://www.who.int/news-room/fact-sheets/detail/human-papillomavirus-\(hpv\)-and-cervical-cancer](https://www.who.int/news-room/fact-sheets/detail/human-papillomavirus-(hpv)-and-cervical-cancer). Accessed on: 23 February 2019.

¹⁰⁷ World Health Organization, *supra*.

¹⁰⁸ World Health Organization, *supra*.

¹⁰⁹ Cancer Association of South Africa (CANSA). Available on: <https://www.cansa.org.za/new-vaccines-preventing-cervical-cancer/>. Accessed on: 23 February 2019.

¹¹⁰ The South African Society of Obstetricians and Gynaecologists, *supra*.

The effects of vaccination can be seen ten to twenty years after vaccination, making this an important long term strategy for HPV prevention.¹¹¹ Vaccination however, does not replace ongoing screening that will be needed for many more decades thereafter.¹¹² More importantly, it has been reported that women suffering from cytological anomalies have so far not experienced the benefits of HPV, and therefore there is doubt as to whether the vaccination would help women with existing precancerous lesions.¹¹³

3.3. So where does that leave us?

In the light of the observations and arguments outlined in the above sections, it is safe to embrace coordination of HPV primary screening and cytological testing as the most appropriate screening policy.¹¹⁴ HPV Advisory Board advises that, given the fact that HPV primary screening is more accurate in the detection of pre-cancer and cancer, this screening should be more implemented as opposed to cytological tests alone.¹¹⁵ However, the dissimilar of the degree of the structures of health systems in different geographical areas of South Africa, the health practitioners should adjust the tests and screenings in order to obtain optimum results in respective health systems. In addition, women infected with HIV are at higher risk of co-infection with HPV and subsequently form persistent pre-cancerous cervical lesions.¹¹⁶ As such this subset of women, known to be at high risk of cervical cancer, deserve much closer screening and treatment protocols.

¹¹¹ The South African Society of Obstetricians and Gynaecologists, *supra*.

¹¹² The South African Society of Obstetricians and Gynaecologists, *supra*.

¹¹³ The South African Society of Obstetricians and Gynaecologists, *supra*.

¹¹⁴ The South African Society of Obstetricians and Gynaecologists, *supra*.

¹¹⁵ The South African Society of Obstetricians and Gynaecologists, *supra*.

¹¹⁶ The South African Society of Obstetricians and Gynaecologists, *supra*.

In the United States of America, representatives from various societies assembled to formulate guidelines for HPV screening.¹¹⁷ These societies include: Society of Gynecological Oncology, American Society for Colposcopy and Cervical Pathology, American College of Obstetricians and Gynecologists, American Cancer Society, American Society of Cytopathology, College of American Pathologists, and the American Society for Clinical Pathology. These guidelines are influenced by reviews of literature and data from Food and Drug Administration (FDA) registration study, and some considerable expert opinions. During the course of the formulation of these guidelines, these societies concluded that “primary HPV screening is an important scientific and clinical advance in cervical cancer screening since it offers better reassurance of low cancer risk compared with cytology-only screening conducted at the same interval.”¹¹⁸

In a large study in the United Kingdom, HPV testing as an initial screen was significantly more protective over three screening rounds (6 years) than cytology. In addition, the use of primary HPV screening could allow a safe lengthening of the screening interval. Modelled analysis predicts that primary HPV screening could be more effective and cost saving compared with cytology. This study and the economic evaluation lend support to convert from cytology to HPV-based screening.¹¹⁹ The clinical effectiveness and cost effectiveness of primary human papilloma virus cervical screening in England: extended follow-up of the ARTISTIC randomized trial cohort through three screening rounds.¹²⁰

In response to the country’s specific challenges, South Africa’s HPV advisory board in 2015 formulated primary screening guidelines for asymptomatic women that are HIV

¹¹⁷ W.K. Huh *et al*, Use of primary high-risk human papilloma virus testing for cervical cancer screening: interim clinical guidance. *Gynecological Oncology* 136(2), (2015), 178 – 82.

¹¹⁸ The South African Society of Obstetricians and Gynaecologists, *supra*.

¹¹⁹ H.C. Kitchener, *et al*. The clinical effectiveness and cost-effectiveness of primary human papillomavirus cervical screening in England: extended follow-up of the ARTISTIC randomised trial cohort through three screening rounds, *Health Technology Assessment*, Volume, 18 Issue, 23 April, (2014), pp 1 – 196.

¹²⁰ H.C. Kitchener, *et al*. (2014), pp 1 – 196.

infected and those that are not HIV infected from high and low resource settings. In resource constrained environments, screening intervals were longer than those in resource rich environments.

Management of positive tests were also included in the guideline. A triage system was also formulated to avoid over treating women with abnormal primary screening tests which may not confer a high risk for severe pre-cancerous lesions. Hence the triage system is a way to manage 'intermediate-risk' results. The board recommended that triage must be done using different tests form those used for primary screening. The tests ranged from visually inspecting the cervix after staining either with acetic acid or Lugol's iodine, biopsy, cytology and LLETZ in low resource settings to cytology with biomarkers and partial genotyping in high resource settings.

Excision treatment with a loop procedure is the preferred treatment option for abnormal screening tests. This is an outpatient procedure that does not require general anaesthesia and hospitalization. The excised specimen has to be sent to the pathology laboratory for histology tests. These strategies have been widely implemented in high resource settings. However poorer environments lag behind with primary screening, even with conventional cytology.

3.4. National Cervical Cancer Prevention and Control Policy

In its policy 2015 policy document, the National Department of Health stated that detection, treatment and follow-up of pre-invasive lesions places a huge burden on already overloaded primary and district health facilities. The document further state that the impact of cervical cancer on communities is aligned with high levels of poverty, cultural factors, social justice, gender, race, ethnicity and geographical location. As a result, poor women living with advanced disease have reduced access to diagnostic and treatment facilities and have higher case fatality rates than women in high income populations.

Most women become economically inactive after diagnosis of cancer as they get chronically ill and debilitated due to severe pain, vaginal bleeding, foul vaginal discharge and fistulation. They often die in social isolation, which corroborates the view that cervical cancer in SA can be said to be a poverty driven disease. After reviewing data from the National Cancer Registry (NCR) from 2010, government decided to make cervical cancer prevention and control a national priority and outlined a policy in line with its strategic objectives. The NCR is a pathology-based registry established in 1986 which collages and analyses cancer cases diagnosed in both private and public pathology laboratories and reports annual cancer incidence rates stratified by age, sex and population groups.

In reference to available data, the NCR in 2011 recorded 4907 cases of cervical cancer. Of these, 4056 (82.7%) were diagnosed in black women compared to 437 cases in white women. This information reveals considerable racial disparities in the magnitude of cervical cancer in black women compared to women of other races which reflects significant inequalities in access to health care services, particularly effective cervical cancer prevention and treatment services.

Information on cervical cancer screening in the public sector in SA is captured by the DHIS (District Health Information Software). The DHIS can provide valuable information pertaining to prevalence of various levels of pre-cancerous lesions derived from cytology and histology reports which can be used in formulating a national cervical pre-cancer registry. This registry could be used as a vehicle for identifying women at high risk for cervical cancer, prioritizing their treatment and following up on their progress and offering them prophylactic hysterectomy before they develop cervical cancer.

4. Conclusion

Lack of commitment from the state to channel resources in the direction of the prevention can be understood as violation of women's rights to healthcare. It was argued in this Chapter that treatment and prevention of cervical cancer should be

prioritized as it makes women more vulnerable without recourse. In light of the impact it has on the dignity of women, the state has to pay attention to its treatment in order to enable every woman to realize right to have and to maintain healthy reproductive organs.

CHAPTER 3

TREATMENT VERSUS PREVENTION OF CERVICAL CANCER

1. Introduction

In cases healthcare debate is about treatment (cure) versus prevention of some specific illness or condition, the old adage that “prevention is better than cure” is still true even today.¹²¹ Prevention is focused on reducing the potential development of an illness whereas cure or treatment is all about restoration or applying remedies to heal an illness or condition.¹²² Elsewhere in this work, it was argued that prevention of cervical cancer is possible, specifically in respect of HIV infected women. This Chapter assesses the efficiency of the use of treatment versus preventative measures.

2. Problems of cervical cancer screening in South Africa

The evidence of decreasing mortality rate from cancer from cancer observed in the Nordic countries, serves as proof that screening programs that are well organized are effective in the reduction of the spread of cervical cancer.¹²³ This evidence dates from the 1960’s after the introduction of nationwide screening. “The largest fall was in Iceland (84% from 1965 to 1982) where the screening interval was the shortest and the target age range was the widest.”¹²⁴ In Norway, the observation with 5% of the population was participated in the screening programs, indicated the smallest reduction in cumulative

¹²¹ L.K. Borysiewicz, Prevention is better than cure, *The Lancet Journals*, Vol 375 February 6, (2010), p 513 - 523.

¹²² L.K. Borysiewicz, (2010), p 513 - 523.

¹²³ Shih-Yung Su, Evidence for cervical cancer mortality with screening program in Taiwan, 1981–2010: age-period-cohort model, *BMC Journal of Public Health*, No. 13:13, 2013, p 1.

¹²⁴ L Denny, Cervical Cancer: Prevention and Treatment, *Journal of Discovery Medicine*, No. 14(75), (2012), p 125.

death at 11%.¹²⁵ Then there was a fall of 50% in Finland, followed by falls in Sweden at 34% and Denmark at 27%.¹²⁶ It is suggested that at least 70% of the population should be screened in order to obtain substantial impact for prevention and treatment of cervical cancer.¹²⁷

The predominant obstacles in developing countries in respect of effective screening programs are as follows:¹²⁸

- Lack of awareness of the disease and the role of screening;
- Failure of women to avail themselves for screening;
- Inadequate budget allocation for screening programs;
- The demands of competing health needs such as HIV infection, tuberculosis, malaria, maternal mortality and other diseases;
- Lack of consumer demand and leading to low political will to establish effective screening programs.

It is submitted that although South Africa's budget on health grows annually, the country is not exempt from the above mentioned screening challenges.

Currently, the target of the South African policy is to afford three smears at an interval of ten annually, "to all symptomatic women above the age of thirty years".¹²⁹ As per the estimation by the South African department of health, over five million women will need to be screened over the next ten years, "in order to achieve 70% coverage of the population".¹³⁰

¹²⁵ L. Denny, (2012), p 125.

¹²⁶ L. Denny, (2012), p 125.

¹²⁷ M. Moodley, (2009), p 11.

¹²⁸ S Bertozzi *et al*, Chapter 18 - HIV/AIDS Prevention and Treatment (In DT Jamison *et al*, (2006), *Disease Control Priorities in Developing Countries*, 2nd edition, p 331 – 369.

¹²⁹ M. Moodley, (2009), p 11.

¹³⁰ M. Moodley, (2009), p 11.

3. Monitoring/Screening Women with HIV

South Africa's low-resource settings seem to contribute to the prevalence of cervical, and this trend is also witnessed in other developing parts of the world, for example (Haiti 93/100,000; Zimbabwe 52/100,000; Malawi 56/100,000; Swaziland 52/100,000)".¹³¹ However, developed countries seem to have very lower levels of the spread of cervical cancer, for example in Finland approximated at only 4 women out of 100,000.¹³² It is also indisputable that poor socio-economic conditions aggravate the incidence of mortality rate from cervical cancer.¹³³ It is estimated that 6 women out 100,000 from previously disadvantaged background die from cervical cancer as compared to 3 from favourable economic conditions.¹³⁴

4. Incidence of Pre-cancerous Cervical Lesions in South Africa: are we keeping Statistics?

Though global guidelines can serve to advocate and promote international health ideals, nations are expected to tailor make policies and programs, in line with internationally acceptable health standards, to address country specific needs.

Given the dire need for South Africa to take drastic and bold steps to address this national epidemic, it is the author's submission that a national registry of women with pre-cervical cancer lesions in South Africa should be developed. This can be done by extracting and compiling histology and cytology data of women with pre-cancerous lesions that exists in the DHIS and using it to follow-up these women with the aim of prioritizing counselling and definitive treatment particularly for those with persistent lesions who are also immune suppressed.

¹³¹ L. Denny, Prevention of cervical cancer. *Reproductive Health Matters*, (2008), 16:18 – 31.

¹³² L. Denny, Prevention of cervical cancer. *Reproductive Health Matters*, (2008), 16:18 –31.

¹³³ L. Denny, Prevention of cervical cancer. *Reproductive Health Matters*, (2008), 16:18 –31.

¹³⁴ L.A.G. Ries, *et al* (Eds): SEER Cancer statistics Review, 1975-2000. Bethesda, MD, National Cancer Institute, 2003.

It is submitted herein that keeping statistics for pre-cancerous cervical lesions would be used to formulate a national registry for prevention of cervical cancer. The registry can have various uses. Firstly, it can be used to initiate a response by health departments to respond to documented cases. Secondly, it allows the disease to be monitored to prevent it from becoming a cancer. Thirdly, it allows health departments to assess the disease burden and to allocate resources for intervention. It is imperative that a registry of this nature be developed so that national prioritization of resources for prevention and treatment can be made at municipal, district and provincial levels.

The registry will contain the contact details of all high risk patients (including contacts of their next of kin), their review and treatment schedules, their prognosis and response to treatment. Those that present with recurrent lesions following various treatment modalities can be given the opportunity to have prophylactic hysterectomy to prevent cancer from developing.

Counselling, education and social support systems should be made available to these patients on an ongoing basis. Counselling should be informative and educative, non-discriminatory, non-judgmental, culture and language conscious, and sensitive to people's levels of literacy. The goals of counselling should not be to invoke fear, but rather to present the patient with information that would allow them to make informed decisions regarding their health status, treatment options and treatment consequences and also consequences of non-treatment. Patients on ART should understand that they should not default on their medication and that they are at high risk of invasive cervical cancer as long as they remain HIV-infected. Use of barrier methods to prevent further exposure to HPV should be encouraged. Those that have not completed their families should be encouraged to do so should. Those that have completed their families but not ready to have a hysterectomy should be encouraged to continue contraception and close targeted monitoring for invasive cervical cancer.

Use of visual educative tools to highlight morbidity and mortality and its socio-economic and psychological complexities due to cervical cancer should be used during

counselling. The reality of leaving young orphaned children in child headed households should the patient loose her life should be discussed. In such counselling sessions, hysterectomy including removal of the cervix, its benefits and consequences should be discussed. Invasive cervical cancer and its consequences should also be discussed. Patients should be permitted to bring along a support partner to the sessions.

5. National cancer registry and making cancer a notifiable disease

A sophisticated computerized data patient base that identifies patients by their national ID numbers would need to be installed in primary and district health care centers as well as in tertiary hospitals. This system will be useful in budgeting and allocation of Human Resources and equipment necessary for the maintenance and support of the project.

South Africa has a cancer data base known as the National Cancer Registry (NCR), which was established in 1986. The source of this pathology-based cancer registry is public and private laboratories that deal with experiments in relation to cytology, histopathology and haematology from across the country.¹³⁵ The purpose of the registry is to organize and analyse newly cases of cancer diagnoses and compile annual report in respect of the rates of cancer incidence.¹³⁶ The registry also has a vital role of formulating and forging awareness of the growing burden of cancer in entire country.¹³⁷

There is an estimate that by 20130, South Africa's number of cancer cases could grow by 78%.¹³⁸ According to the same estimate, South Africa is ranked 50th on the World Cancer Research Fund's list of counties with the highest cancer prevalence rates.¹³⁹ It is noted that the populations in the advanced age and those suffering from HIV/AIDS

¹³⁵ F. Erdmann *et al*, Childhood cancer incidence patterns by race, sex and age for 2000–2006: A report from the South African National Cancer Registry, *International Journal of Cancer*, No. 136, (2015), pp 2628–2639.

¹³⁶ F. Erdmann *et al*, (2015), pp 2628 – 2639.

¹³⁷ F. Erdmann *et al*, (2015), pp 2628 – 2639.

¹³⁸ K. Sartorius, The future cost of cancer in South Africa: An interdisciplinary cost management strategy, *South African Medical Journal*, Vol. 106, No. 10, October, (2016), pp 949 – 950.

¹³⁹ K. Sartorius, (2016), 949 – 950.

are at a particular risk of developing certain cancers due to the susceptibility of their immune competence towards certain cancers.¹⁴⁰

Given the fact that the burden of cancer in South Africa is on the rise coupled with the existence of the NCR puts her in a good place to declare cancer a notifiable disease. Notification of cancer will lead to improved awareness of the causes of cancer, better understanding of prevention, better utilization of health resources and evaluation of the effectiveness of health programs such as cancer screening and treatment.

Notification is reporting by health care providers of the occurrence of a specific disease to a designated health authority. Its primary function is to achieve prevention and control of the disease. From writer's experience, it is suggested that notification can be done by treating doctors, pathologists and haematologist who confirm the existence of cancer, primary health care centres, community health centres, district hospitals, nursing homes, poly clinics and speciality hospitals.

In South Africa, cancer is not a notifiable disease. There are countries around the globe, including developing countries like The Gambia and Puerto Rico, where cancer is notifiable. "Large registries have very low failure in cancer notification. Most registries have a failure rate of <5%, thus providing very valuable information."¹⁴¹

If cervical cancer, like tuberculosis (TB), is declared a notifiable disease, cancer patients may be diagnosed and treated in precancerous and curable stages.¹⁴² Similar to TB

¹⁴⁰ LM Kester *et al*, A National Study of HPV Vaccination of Adolescent Girls: Rates, Predictors, and Reasons for Non-vaccination, *Maternal and Child Health Journal*, No. 17(5), (July 2013), pp 879 – 885.

¹⁴¹ R.N. Anderson and H.M. Rosenberg. Disease classification: Measuring the effect of the tenth revision of the international classification of diseases on the cause- of- death data in the United States. *Statistics in Medicine* 22, (2003), 1551–1570.

¹⁴² N, Zetola *et al* Collision of Three Pandemics: The Coexistence of Cervical Cancer, HIV Infection, and Prior Tuberculosis in the Sub-Saharan Country of Botswana, *Journal of Global Oncology*, Volume 2, Issue 1, February, (2016), 47 – 50.

vaccination, HPV vaccination will therefore be included in the national child immunization schedule for young boys and girls. Cervical screening for women aged 15-45 will be given national priority. Patients at high risk for cervical cancer will be selected for closer monitoring and possible treatment by prophylactic hysterectomy.

6. Education and Prevention of Cervical Cancer

The best form of education to patients is rooted in the communication between health provider-patient.¹⁴³ Provider recommendation has shown a strong correlation to vaccination decisions.¹⁴⁴ This has been identified in studies that have shown the importance of provider recommendation in HPV vaccination initiation and completion.¹⁴⁵ Patients attending private healthcare facilities have the privilege of seeing the same doctor regularly and subsequently forming a good doctor-patient relationship. This scenario does not apply to women using public healthcare facilities in South Africa. These women are therefore less likely to initiate and complete vaccination. Continued provider support throughout the vaccination process is essential, particularly in recognizing that those who postpone vaccination (or never receive vaccination) lose potential for protection once exposure to vaccine-related HPV infection has occurred.¹⁴⁶

7. Prevention of cervical cancer strategies

We have learnt from countries that have successfully implemented mass organized screening programmes that the cumulative reduction in cervical cancer incidence is achieved by selecting the appropriate target group for screening and by extending the coverage to 100% of targeted women. Coverage has been shown to be more valuable than frequency of screening. With high coverage, two-thirds reduction in cervical cancer can be anticipated. Cervical cancer is particularly amenable to

¹⁴³ Jennifer Fong Ha, Doctor-Patient Communication: A Review, *The Ochsner Journal*, No. 10, (2010), p 38.

¹⁴⁴ Fong Ha, (2010), *supra*.

¹⁴⁵ Fong Ha, (2010), *supra*.

¹⁴⁶ LM Kester *et al*, (2013), *supra*, pp 879 – 885.

prevention as it has a long pre-clinical phase and the natural history of cervical carcinogenesis is well researched. In addition, treatment of pre-invasive lesions has been shown to reduce the incidence of invasive cervical cancer. The challenge in South Africa is the high incidence of cervical cancer in HIV infected women. “Even in the context of good access to the use of ART, HIV infection more than doubled the risk of death among women who received curative guideline-concordant therapy for pre-cancerous lesions. Early oncologist progression among women with HIV seemed to account for the excess mortality.”¹⁴⁷

In a South African study, it was showed “extremely high rates of persistence of cervical intraepithelial lesions in HIV infected women and women with the disease at the excision margins following LLETZ warrants more intensive follow up of women with margins involved by CIN and especially women who are HIV infected”.¹⁴⁸ With an estimated 2 million women infected with HIV in South Africa, mostly between the ages of 15 and 45 years, we should expect a significant percentage to have recurrent pre-cancerous lesions even after treatment.¹⁴⁹ These constitute a large pool of women at high risk of invasive cervical cancer who could be treated definitively with prophylactic hysterectomy.¹⁵⁰

It is the author’s suggestion that prevention strategies should include primary prevention - by preventing HPV infection de novo. This means preventing infection with HPV and ultimately the development of cervical cancer through vaccination. Vaccines are

¹⁴⁷ S. Dryden-Peterson et al, HIV infections linked with death from cervical cancer, *Journal of Clinical Oncology*, August, (2016), p 3756.

¹⁴⁸ Y. Adam, Predictors of persistent cytologic abnormalities after treatment of cervical intraepithelial neoplasia in Soweto, South Africa: a cohort study in a HIV high prevalence population, *BMC Cancer* 2008, 8:211, 25 July, (2008), p 1–8.

¹⁴⁹ Y. Adam, (2008), *supra*, p 1 – 8.

¹⁵⁰ Y. Adam, (2008), *supra*, p 1 – 8.

prophylactic and should be administered to individuals before infection.¹⁵¹ The authors cited in previous footnote used modelling to predict that, assuming coverage of 70% of girls aged 9-12 years, vaccinating against HPV types 16 and 18 will reduce the lifetime risk of cervical cancer by 43%.¹⁵² However, at coverage rates of 100% the expected cancer reduction with vaccination alone reaches 61%. Combined approach of vaccinating young girls and screening women over 30 years, at 70% coverage for both, will provide an estimated 53-70% reduction in the lifetime risk of cervical cancer.¹⁵³ But at 100% coverage rates, the the combination of vaccination and screening of older women, the reduction is approximately 75%.¹⁵⁴ The above approach incorporates both secondary prevention-screening and treating precancerous lesions.¹⁵⁵ With respect to tertiary prevention, the approach entails treatment of histologically proven cervical cancer.¹⁵⁶ This ranges from hysterectomy for early cancers; radiation, chemotherapy and palliative care. Women with such lesions are offered excision or ablation treatments for the lesions.¹⁵⁷ Although this approach is very effective where the infrastructure to sustain it has been successfully maintained, no developing country has managed to initiate and sustain such a system.¹⁵⁸

7.1. Prevention strategies for cervical cancer

Preventative measures of cervical cancer incorporate multi-pronged tactics, creation of awareness, advocacy, partnerships between public-private sectors in respect of HPV vaccination, destruction of cancer related lesions by adopting early screening and

¹⁵¹ S.J. Goldie *et al.* Projected clinical benefits and cost-effectiveness of a human papillomavirus 16/18 vaccine. *J Natl Cancer Institute*, (2004), 604–615.

¹⁵² S.J. Goldie *et al.*, (2004), 604–615.

¹⁵³ S.J. Goldie *et al.*, (2004), 604–615.

¹⁵⁴ S.J. Goldie *et al.*, (2004), 604–615.

¹⁵⁵ S.J. Goldie *et al.*, (2004), 604–615.

¹⁵⁶ S.J. Goldie *et al.*, (2004), 604–615.

¹⁵⁷ S.J. Goldie *et al.*, (2004), 604–615.

¹⁵⁸ S.J. Goldie *et al.*, (2004), 604–615.

treatment.¹⁵⁹ It goes without a say that various communities and countries commit their resources differently in respect of the implementation of the above measures.

7.2. Vaccination

Age-appropriate prophylactic HPV vaccination is an important strategy to reduce the excessive burden of HPV-related cervical cancer. In the USA, it has been shown that Human papilloma virus (HPV) vaccination can lead to substantial reductions in the incidence of HPV infection and HPV-related diseases, including anogenital cancers and genital warts.¹⁶⁰ The introduction and licensing of the quadrivalent HPV vaccine in 2006 and the subsequent licensing of the bivalent vaccine in 2008 created opportunities to counter the existing HPV disease burden.¹⁶¹

Routine vaccination with either the bivalent or quadrivalent vaccine has been recommended by the Centers for Disease Control and Prevention's (CDC's) Advisory Committee for Immunization Practices (ACIP) for adolescent females ages 11 – 12, with catch-up vaccine for women 13-14 years of age. Completion of three doses of the vaccination is required to confer immunity to vaccine preventable HPV.¹⁶² This is an extremely important HPV preventative measure for adolescents that acquired HIV through mother-to-child transmission before sexual debut.¹⁶³

¹⁵⁹ P Aggarwal, Cervical cancer: Can it be prevented? *World Journal of Clinical Oncology*, October, (2014), 775-780.

¹⁶⁰ Morbidity and Mortality Weekly Report (MMWR Quadrivalent Human Papilloma Virus Vaccine. RR02. Vol.56. CDC, (2007) p 1–24.

¹⁶¹ Morbidity and Mortality Weekly Report (MMWR Quadrivalent Human Papilloma Virus Vaccine. RR02. Vol.56. CDC, (2007) p 1–24. Morbidity and Mortality Weekly Report (MMWR) FDA licensure of Bivalent Human Papilloma Virus (HPV2 Cervarix) for Use in Females and Updated HPV Vaccination Recommendations from the Advisory Committee on Immunization Practices (ACIP) 2010. 20. Vol. 59. CDC; (2010), p 626–629. QuickStats: Prevalence of HPV infection Among Sexually Active Females aged 14-25 years by Age Group.

¹⁶² Morbidity and Mortality Weekly Report, (2007) p 1–24.

¹⁶³ Morbidity and Mortality Weekly Report, (2007), p 1–24.

7.3. Poverty and HIV/HPV

Some studies have identified the commonest face of poverty in South Africa and its consequent relationship to the HIV/AIDS epidemic. It has been indicated that “young women are more likely to be HIV infected, especially heads of households.”¹⁶⁴ These young women condition of poverty make them vulnerable to HIV infection.¹⁶⁵

In another South African study it was shown that poverty and its associated factors, for example low education and decreased decision-making power, can indeed increase the risk of HIV infection. Low socioeconomic status robs the poor of the knowledge necessary for the prevention of infection with HIV/AIDS and also increases the susceptibility to infection and thus making the poor more likely to practice unsafe sexual behaviour.¹⁶⁶

A study that looked into socioeconomic status of rural women in 2001 showed that “for the majority of women in South Africa existing socioeconomic rights, as guaranteed in the Constitution, remain inaccessible resulting in the perpetuation and increase as well as feminization of poverty. Furthermore, especially for rural women and women on farms, the constitutional guarantees of equality and non- discrimination remain merely theoretical rights that lack practical implementation.”¹⁶⁷

A more recent South African study published in 2016 showed that “HIV prevalence among young women in South Africa is nearly four times greater than that of men their age.”¹⁶⁸ “Young women between the ages of 15 and 24 made up 37% of new infections

¹⁶⁴ O. Shisana, Gender and Poverty in South Africa in the era of HIV/AIDS: a quantitative study, *Journal of Women's Health*, (2010), p 39.

¹⁶⁵ O. Shisana *et al*, (2010). *Ibid*.

¹⁶⁶ L.S. Tladi, Poverty and HIV/AIDS in South Africa: an empirical contribution, *Journal of Social Aspects of HIV/AIDS*, VOL. 3, No. 1, May (2006), p 369 – 381.

¹⁶⁷ J. Keller, Women and Poverty: The South African Experience. *Journal of International Women's Studies*, Vol.3(1), (2001), p .] Available at: <http://vc.bridgew.edu/jiws/vol3/iss1/3>. Accessed on: 28 October 2018.

¹⁶⁸ LM Kester *et al*, (2013), 879 – 885.

in South Africa in 2016.”¹⁶⁹ Poverty and the low social status of women have been cited as the reasons for the disparity in HOV prevalence between the genders.¹⁷⁰

7.4. Gender based violence and HIV/HPV

The United Nations estimates that gender based violence attributes to 20-25% of new HIV infections in young women.¹⁷¹ In SA, the legal status of women changed with the 1996 Constitution, and with a range of other Acts passed since then - for example the domestic violence act, Maintenance Act, Promotion of Equality and Prevention of Unfair Discrimination Act, Recognition of Customary Marriages Act and Choice of Termination of Pregnancy Act. However, the economic and social conditions under which most South African women still live effectively renders them citizens without rights. The implementation and acceptability of recent laws addressing gender equality and gender based violence has been hampered by continuing discriminatory attitudes and practices amongst law enforcement agencies and health service providers; by lack of, or uneven distribution of resources; by ignorance; and by inadequate protocols, training and skills provision. These factories have contributed to victimization, lack of trust in law enforcement agencies and health care providers, under-reporting of incidents of gender based violence, low conviction rates of offenders, and increasing HIV prevalence.

According to the South African Demographic and Health Survey of 1998, the highest incidence of abuse by a partner in the previous year was 7.3% for age group 15-19 and 7.4% for age group 20-24.¹⁷² The Nelson Mandela Foundation/HSRC HIV/ AIDS Survey 2002 found that the 25-29 year age group was most at risk for HIV infection, with an HIV prevalence rate of 28%.¹⁷³ The findings of these two studies indicate the high vulnerability of young women to HIV infection, and the gendered nature of the HIV

¹⁶⁹ LM Kester *et al*, (2013), *supra*, pp 879 – 885.

¹⁷⁰ LM Kester *et al*, (2013), *supra*, pp 879 – 885.

¹⁷¹ UNAIDS (2016) ‘Guidance: HIV prevention among adolescent girls and young women’.

¹⁷² South African Demographic and Health Survey of 1998.

¹⁷³ Nelson Mandela Foundation/HSRC HIV/AIDS Survey 2002.

epidemic. High incidences of rape of women and children complex by under-reporting of these crimes to law enforcement agencies and to health service providers further promotes new HIV infections as most victims are unaware of HIV prophylaxis available.¹⁷⁴

In the United States of America, certain sectors of society grouped themselves to fight against gender-based violence. This resulted in the enactment of Violence Against women's Act in 1994. The Violence Against Women Act of 1994 (VAWA) in the United States federal law signed by President Bill Clinton in September of 1994. The Act provided \$1.6 billion toward investigation and persecution if violent crimes against women, imposed automatic and mandatory restitution of those convicted, and allowed civil redress in cases prosecutors choose to leave unprotected. The Act also established the Office on Violence Against Women within the Department of Justice. Grant programs authorized in VAWA have been funded by the US Congress and are administered primarily through the Office of Violence Against Women in the US.

This Act was developed and passed as a result of extensive grassroots efforts in the 1980's to 1990's with advocates and professionals from the battered women's movement, sexual assault advocates, victim services, law enforcement agencies, prosecutors' offices, the courts and the private bar urging Congress to adopt significant legislation to address domestic and sexual violence. All these sectors of society worked together in a coordinated effort that did not exist before at state and local levels. In addition, when a woman is the beneficiary of an offer for protection in a particular province, as per VAWA it is generally enforceable nationwide in terms of the 'full faith and credit'. This means that although an order was granted in a specific province, full faith and credit requires that it be enforced in other provinces as though the order was granted in those provinces.

South Africa too can realize similar change in prevalence of gender-based violent through collective efforts, collaboration and commitment of private, state and civil

¹⁷⁴ Nelson Mandela Foundation/HSRC HIV/ AIDS Survey 2002.

society in ending the scourge of new HIV infections in vulnerable members of its citizenry.

8. Conclusion

Administering hysterectomy to women infected with HIV is considered to be preventative in nature. The preventative approach ought to include counselling, education and social support systems. Well-organized screening programs are effective in reducing the incidence and prevalence of cervical cancer. It was noted in this Chapter that cervical cancer is not listed as notifiable disease, like tuberculosis. As such resources are not channelled in the prevention of cervical cancer. It was observed that treatment of cervical cancer is more costly as more resources are required to remove the cells and administer follow up treatment after surgery. In conclusion, hysterectomy as a preventative measure would be more viable to emphasize as its outcomes are more sustainable and less burdening on the patient's body.

CHAPTER 4

THE FINANCIAL AND CLINICAL EFFECTIVENESS OF HYSTERECTOMY

1. Introduction

Treatment afforded to women infected with HIV and with the risk of developing cervical cancer should not only be about affording care to a greater number of women, but it should also deliver quality care.¹⁷⁵ Since hysterectomy can be one of the costly procedures performed on non-pregnant younger than 65 years of age, prior prevention of women with the higher risk of cervical cancer can reduce financial and health disparities caused by surgical removal of cancerous cells.¹⁷⁶ Prevention is would also reduce hospitalization of women critically suffering from cervical cancer.¹⁷⁷ Chapter 4 presents a critical overview of financial and clinical effective of hysterectomy.

2. Are hysterectomies a feasible and sustainable option?

It is the author's suggestion that a pilot can be done in a selected or selected locations. Gauteng province, for example, may use all theatre facilities available in both public and private facilities, with after-hours included. The process of performing hysterectomies should engage all stake holders: gynaecologists; theatre trained nurses, anaesthesiologists; private and public sectors; pharmaceuticals. The procedure should involve the utilisation of partnerships of gynaecologists/anaesthesiologists from the private practice to do at least one pro-bono hysterectomy per week in their facility. These specialists should send all specimens for histology and document all findings in DHIS database, and treat all incidental findings of early invasive cancers, if any, according to national guidelines. These doctors should also document the monitory cost

¹⁷⁵ R.B. Hakim *et al*, Quality of Care for Women Undergoing a Hysterectomy: Effects of Insurance and Race/Ethnicity, *American Journal of Public Health*, Vol 94, No. 8 August 2004, 1399 – 1405.

¹⁷⁶ R.B. Hakim *et al*, (2004), 1399 – 1405.

¹⁷⁷ R.B. Hakim *et al*, (2004), 1399 – 1405.

of the hysterectomy and any subsequent treatment compared to that of invasive cancer follow up on morbidity/ mortality/quality of life/ etc. post surgery up to five years or even 10 years mobilize/engage the international community to assist with funding and expertise to continue the project and to develop sustainable pillars to support the project give feedback to individual patients, communities and their stake holders of progress

3. Access to targeted screening for HIV infected women

Every woman presenting to clinic for contraception, HIV testing, STI treatment, infant/child Immunisation after delivery should be offered HIV testing and HPV screening. The cervical cancer prevention and control policy recognizes to identifying groups of women for targeted screening. One such group is that of HIV-infected women that are considered high risk for development of cervical cancer. It is submitted that these women should undergo cervical cancer screening on the intervals of once in three years where the test is negative and once every year in the case of positive test.

4. Alternatives to conventional cytology

It is challenging to successfully implement screening programs in respect of cytology tests in developing countries, and as such some researchers have directed their attention to other conventional alternatives.¹⁷⁸ In these alternatives, the objectives are to minimize costs as well integrate screening and treatment.¹⁷⁹ One of the conventional alternative is visual inspection of the cervix with acetic acid (VIA), which compares as follows to cytology: similar sensitivity to cytology (62-80%); lower specificity is (77-84%) “in its ability to detect high grade dysphasia”.¹⁸⁰ Where commercial test kits were used for high-risk HPV, there is clear indication that “HPV DNA testing has a higher sensitivity

¹⁷⁸ R. Catarino *et al*, Cervical cancer screening in developing countries at a crossroad: Emerging technologies and policy choices, *World Journal of Clinical Oncology*, December (2015), pp 281 – 290.

¹⁷⁹ R. Catarino *et al*, (2015), pp 281 – 290. *Ibid*.

¹⁸⁰ R. Catarino *et al*, (2015), pp 281 – 290. *Ibid*.

than cytology or VIA".¹⁸¹ Tests by means of HPV DNA with cryotherapy treatment "has the potential of screening and treating women in one sitting and studies have shown it to be twice as effective as VIN followed by cryotherapy in reducing histologically confirmed CIN 2 and CIN 3 at six and twelve months of follow up(22)".¹⁸² Due to the prohibitive costs, HPV DNA testing is unenviable in developing countries.¹⁸³

5. Management of cervical cancer

Managing cervical cancer patients with in poses various challenges across Southern Africa.¹⁸⁴ The process of treating patients diagnosed with cervical cancer is mainly overseen by the government.¹⁸⁵ As a result of this burden on the government, patients are not attended to in appropriate periods for clinical assessments and surgical procedures. It is also submitted that, "since high care or intensive care facilities are shared with other surgical disciplines, high-care beds may be unavailable at the time of surgery".¹⁸⁶ The quality of work by other support facilities such as Pathology laboratory services are also overloaded with work.¹⁸⁷ Other inherent challenges in South Africa include lack of adequate equipments such as radiotherapy machines. The abovementioned problems lead to unacceptable waiting lists and high rate of patients defaulting treatments, thus allowing the disease to advance and pose more threat to the lives of the infected victims.

It is suggested that in order to cope with the long waiting periods for radiotherapy, patients with competent health statuses should be enlisted for radical treatment and

¹⁸¹ R. Catarino *et al*, (2015), pp 281 – 290. *Ibid*.

¹⁸² R. Catarino *et al*, (2015), pp 281 – 290. *Ibid*.

¹⁸³ R. Catarino *et al*, (2015), pp 281 – 290. *Ibid*.

¹⁸⁴ Moodley, (2009), p 13. *Ibid*.

¹⁸⁵ Moodley, (2009), p 13. *Ibid*.

¹⁸⁶ Moodley, (2009), p 13. *Ibid*.

¹⁸⁷ Moodley, (2009), p 13. *Ibid*.

others, particularly those in terminal status of the infection, be channelled for palliative treatment.¹⁸⁸ This suggestion is motivated by the fact that managing cervical cancer patients who are HIV-infected poses serious treatment challenges”.¹⁸⁹ In order to tailor appropriate treatment, the performance status of the patient and the CD4 count need to be taken into consideration.¹⁹⁰ The Patients with low CD4 counts need to be referral for antiretroviral treatment and prescribed special nutrition before ultimate treatment, which may lead to further delays.¹⁹¹ It is correctly observed that survival rates from cervical cancer are higher in developed countries as compared to developing countries.¹⁹²

In a survey analysis of patients treated with radiotherapy, the one to three year survival probabilities for zero positive patients compared with zero negative patients was 67%, 40%, 27% and 89%, 62% and 51% respectively.¹⁹³ The survival probabilities in the fourth year had dropped to 0% for zero positive patients and 46% for zero negative patients.¹⁹⁴ In Kenya, the study conducted on HIV-infected patients indicates toxicity across various organs and systems, which include: the skin, gastrointestinal tract and genitourinary system.¹⁹⁵ This toxicity is reported to occur seven times more in HIV non-infected patients, and for that reason treatment is very crucial.¹⁹⁶ In HIV-infected women, the residual disease post external beam radiotherapy in about 6-folds.¹⁹⁷

¹⁸⁸ M. Moodley, J. Moodley, and I Kleinschmidt, Invasive cervical cancer and human immunodeficiency virus (HIV) infection: a South Africa perspective. *International Journal Gynecology Cancer*, (2001), 194 – 197.

¹⁸⁹ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

¹⁹⁰ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

¹⁹¹ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

¹⁹² M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

¹⁹³ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

¹⁹⁴ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

¹⁹⁵ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

¹⁹⁶ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

¹⁹⁷ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid.*

In general, the HIV epidemic has resulted in many patients presenting in poor general conditions leading to the prescription of palliative radiotherapy or just symptomatic care.¹⁹⁸ Though the mean age for women with cervical cancer was 50.2 years, Moodley *et al* found that there was a difference between mean age of between HIV positive women and HIV negative women in that positive women were 15 years younger than negative women.¹⁹⁹ This places a huge burden on the public sector due to large numbers of women presenting with pre-cancerous lesions. Nevertheless, cancer diagnosed as earlier stages is associated with fewer complications, reduced morbidity and mortality and lower costs of treatment.²⁰⁰

It goes without saying that in order to save lives, prevention of cervical cancer strategies in SA should be more vigilant and committed to both screening and definitive treatment, particularly in high risk women.

6. Cost of treating cervical cancer vs cost of hysterectomy

Costs of cervical cancer treatment, if assessed purely from a monetary perspective can be quantified. However, from the qualitative perspective, it is difficult to place a value on physical and social disability, emotional liability and loss of life both for the patient and for the patients' family.²⁰¹ A recent Vietnamese study conducted in 2017 looked at the cost of treating cervical cancer in its various stages.²⁰² They found that “the cost of cervical cancer treatment ranged from US\$ 368-11400 depending on the type of hospital and treatment involved...whereas the cost of fully immunizing a girl ranged

¹⁹⁸ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid*.

¹⁹⁹ M. Moodley, J. Moodley, and I Kleinschmidt, (2001), 194 – 197. *Ibid*.

²⁰⁰ R. James *et al*, Danforth's Obstetrics and Gynecology (9th Ed), (2003), Lippincott Williams & Wilkins Publishers.

²⁰¹ H. Van Minh *et al*, Cervical cancer treatment costs and cost effectiveness analysis of human papillomavirus vaccination in Vietnam: a PRIME modeling study, *BMC Health Services Research* No. 17:353, (2017), p 3 – 7.

²⁰² H. Van Minh *et al*, (2017), p 3 – 7.

between US\$ 15-168.”²⁰³ This study clearly illustrates that it is sensible and cost effective to prevent cervical cancer through subsidized vaccination, even in third world countries.

In Ontario, Canada, a study was done in 2016 to assess the costs of medical care associated with cervical cancer within the first 5 years after diagnosis. The results showed that “the mean overall medical care cost was \$39,187 in the 1st year after diagnosis. Costs in year one ranged from \$34,648 for those who survived at least 1 year to \$69,142 for those who died from cervical cancer within one year.” The study also showed that “at 5 years after diagnosis, the mean overall adjusted cost was \$63,132...In patient hospitalizations and cancer-related care were the two largest components of cancer treatment costs.”²⁰⁴ Medical care costs were approximately \$40,000 in year 1, \$14,000 in year 2, \$11,000 in years 3, \$9,000 in year 4 and \$5,500 in year 5.²⁰⁵ Effective management of cervical cancer therefore requires optimal access of women to prevention and early diagnosis. Detection of cancer in its early stages can prevent deaths and can make large savings.²⁰⁶

In 2012, the American Society for Colposcopy and Cervical Pathology issued guidelines for management of pre-invasive cancer that supported hysterectomy after diagnostic excisional procedures produced results showing recurrence of disease.²⁰⁷ This approach is a definitive prevention of cervical cancer in women at high risk, namely those that have recurrence after treatment.²⁰⁸ It is the authors opinion, supported by literature cited earlier in the text, that women with HIV infection are higher risk of

²⁰³ H. Van Minh *et al*, (2017), p 3 – 7.

²⁰⁴ C. Pendrith *et al*, Costs of cervical cancer treatment: population-based estimates from Ontario, *Current Oncology: A Canadian Cancer Journal*, Volume 23 No. 2, (April 2016), p e19.

²⁰⁵ C. Pendrith *et al*, April 2016), p e19.

²⁰⁶ C. Pendrith *et al*, April 2016), p e19.

²⁰⁷ L. Stewart Massad *et al*, 2012 Updated Consensus Guidelines for the Management of Abnormal Cervical Cancer Screening Tests and Cancer Precursors, *Journal of Lower Genital Tract Disease*, Volume 17, No. 5, (2013), pp S1 – S27.

²⁰⁸ L. Stewart Massad *et al*, (2013), pp S1 – S27.

developing cervical cancer than those that are not HIV infected.²⁰⁹ Hence they too could benefit from prophylactic hysterectomy.

From the author's experience as a surgeon, the cost of a total abdominal hysterectomy procedure at a private hospital in South Africa in 2018 at standard medical aid rates would cost approximately R40, 000.00. This figure is inclusive of the surgeon and his/her assistant surgeon, the anaesthetist and the hospital. The procedure entails removing both the uterus and the cervix. The ovaries are left behind if healthy. The patient would be discharged 3 days after the procedure and given bed rest for six to eight weeks thereafter. Common risks of complications after hysterectomy include injury to nearby organs, anaesthesia problems, infection, heavy bleeding, blood clots in legs or lungs, early menopause (if ovaries are removed) and pain during intercourse. All the complications mentioned above can be resolved successfully through medical or surgical interventions.

When comparing prophylactic hysterectomy to cervical cancer, one has to consider its long term benefits namely prolonged life expectancy, improved quality of life, better economic productivity and the possibility of parenting children through surrogacy or adoption. This brings us closer to the WHO's first principle set out in the preamble to the Constitution which states that 'health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.'²¹⁰

6.1. Patent rights reform

South Africa has a "process of reviewing and amending national laws governing the protection of intellectual property (IP) with the aim of remedying significant shortcomings

²⁰⁹ L. Stewart Massad *et al*, (2013), pp S1 – S27.

²¹⁰ Constitution of the World Health Organization of 2014.

in legislation that allow for granting of excessive number of patents, and evergreening if of monopoly periods at the expense of medicine access”.²¹¹

As a member of the world Trade Organization, SA is required to uphold minimum standards of IP protection as defined by the international agreement on Trade Related Aspects of Intellectual Property Rights (the TRIPS agreement). The TRIPS agreement requires SA to grant 20 years of patent protection on products and processes that meets SA’s patent ability criteria. These criteria are the standards of novelty, innovativeness and industrial applicability required to receive a patent.²¹² The majority of patents granted in South Africa fail to meet the country’s patentability criteria and yet are granted as a result of the depository system used for granting patents in the country without examining their merits.²¹³

The ease with which pharmaceutical patents are granted in SA permits pharmaceutical companies to gain multiple, successive patents on individual medicines, extending their periods of monopoly protection beyond the 20 years required by the TRIPS agreement. This practice is commonly known as ‘evergreening’. Evergreening of patents prevents generic versions from being brought to the market at a 30% price reduction when the initial patent period has expired. Excessive patenting and evergreening of monopoly periods prevents South Africans from accessing more affordable generic versions of many medicines, despite their widespread use and availability in other parts of the world.

²¹¹ C. Tomlinson, Reforming South Africa’s procedures for granting patents to improve medicine access, *South African Medical Journal*, No. 9, Volume 105, (September 2015), p 9.

²¹² C. Park and A. Prabhala, and J. Berger, Using the law to accelerate treatment access in South Africa: An analysis of patent, competition and medicine law. *New York: United Nations Development Programme*, (2013).

²¹³ C. Ncube, The draft national intellectual property policy proposals for improving South Africa’s patent registration system: A review. *Journal of intellectual property law and practice*, (2014), pp (822 – 829).

The Fix the Patent Laws Coalition called on the DTI to urgently release a final policy recommending key reforms to curb evergreening and improve medicines access. Fix the Patent Law Coalition comprises 15 health organizations in SA that represent patients seeking treatment and care in the realms of HIV, cancer, reproductive and sexual health, mental conditions and other diseases.

A case in point is the accessibility of vaccines against HPV in the public sector for primary HPV prevention of girls aged 9-11 years. Though widespread evidence exists that vaccination is the best long term strategy in reduction of cervical cancer, the challenge to the state is the cost of vaccination as each dose costs almost R900. This translates to at least R2700 for a girl-child to complete the three recommended doses required to confer immunity taken over a period of six months, a cost that many poor families cannot afford.

Adopting stricter patentability criteria and implementing patent examination in SA would significantly reduce the number of patents granted. This will facilitate generic competition, lower medicine prices, and ensure increased access to medicines for individuals who are currently unable to afford the rear nets that they need, and for the government in its procurement of medicines for the public sector. In addition, it is possible to challenge existing patent rights to HPV vaccines that could lead to reduction of the patent periods to allow for introduction of cheaper generic vaccines. Furthermore, it could be argued that importation of generic HPV vaccines at low cost by the state strictly for primary prevention use in the public sector for young girls from poor communities is feasible as this would not pose a competitive threat to patented pharmaceuticals since these young girls and their families cannot afford to purchase commercially marketed vaccines in any case. In so doing, the pharmaceuticals target market remains protected and health needs of girl-children from poor communities are not neglected.

7. Conclusion

In this Chapter, the feasibility of offering hysterectomy to women who are HIV positive was observed. It was found that management of patients with cervical cancer in South Africa poses numerous challenges. The public sector bears the burden of patients diagnosed with cervical cancer. This often leads to long waiting times for the clinical assessment of such patients and subsequent unacceptable surgical dates. As such it is suggested that vaccination of women against cervical cancer would lessen the strain on the public resources. Other methods such as cytology were found to be very costly. It is the author's submission that in view that hysterectomy would be more cost effective for prevention of cervical cancer in women infected with HIV across all ages.

CHAPTER 5

RECOMMENDATIONS AND CONCLUSION

1. Introduction

As discussed in Chapter 4, the disparities created by cervical cancer among women may be looked at as leading to violation of the rights of women to healthcare as contained in section 12 of the Constitution. It was indicted in this work that HIV infected women are the most susceptible to develop cervical cancer. As such, it is submitted that administering hysterectomy to HIV positive women would save costs of admitting this group of women at a later stage when cervical cancer had already set in. This approach would save costs for the state and ensure that HIV infected women also fully realize their rights to healthcare. Chapter 5 summarises all the views and arguments presented in the preceding chapters. The author further presents some recommendations that may be adopted to resolve problems in relation to HIV and cervical cancer.

2. Recommendations

2.1. Recommendation one

Cervical cancer in South Africa should be a notifiable disease. The author has shown that prevention and control of cervical cancer is better achieved in countries where cancer is a notifiable disease. In these countries, notification of cancer has resulted in improved awareness and understanding of preventative measures, better utilization of health resources and better monitoring and evaluation of health programs.

2.2. Recommendation two

Revision of national management protocols for patients with persistent precancerous cervical lesions, particularly immune compromised and HIV infected women should include prophylactic hysterectomy.

Currently the national protocol for management of pre-invasive cervical lesions in South Africa does not include hysterectomy. Patients have to have a positive histopathological report of invasive cervical cancer at its early stages before they get offered hysterectomy. Due to long waiting periods in most public facilities, many patients present with advanced inoperable cancer when due for surgery. This must change.

2.3. Recommendation three

Urgent reformation of patent laws will make HPV vaccines affordable to the state for prevention of HPV infection in young girls and boys. It has been shown that HPV infection can be prevented through vaccination. In South Africa, the cost to the state of vaccinating young boys and girls is unaffordable due to high prices of the vaccines. Reform of patent laws for prevention of documented causes of cancer, like HPV, warrant special revision to allow for production of more affordable vaccine options.

2.4. Recommendation four

South Africa must develop a national registry of women with precancerous cervical lesions. We do know that precancerous cervical lesions left untreated will ultimately lead to cervical cancer. We also know that development of cervical cancer can take up to ten years after diagnosis of precancerous lesions. Hence cervical cancer can be prevented if effort is made to closely follow up selected patients at high risk of developing cancer.

2.5. Recommendation five

Campaign and mobilization of health care providers and health care centers to avail themselves and their facilities to perform pro bono hysterectomies for state patients at high risk of cervical cancer.

The TAC's achievements have shown us that it is possible to achieve equal health rights for all in South Africa through concerted and committed efforts of its citizens. Ubuntu is a quality that includes essential human virtues of compassion and humanity. We can all play a part to do good for those amongst us whose lives depend on us offering our time, skills and resources.

3. Implementation of Awareness Programs

In Chapter 1, it was outlined that cervical cancer develops from human papillomavirus (HPV). In other words, prevention of the transmission of this virus is a definite way of preventing cervical cancer. However, women who are HIV positive are more susceptible to this virus. It is suggested that creating awareness for women to practice safe sexual intercourse could lead to elimination of the transfer of HPV. Well established awareness programs would educate women to also take steps to do regular medical tests in order to undergo early treatment before cervical cancer ensues.

4. Dealing with Poverty and Related Problems

In the preceding Chapters, it was shown that cervical cancer is more prevalent in developing countries. In addition to the problem of lack of awareness about the nature of cervical cancer, women in poor localities do not have easy access to healthcare resources. Due to the poverty and financial dependency, they are often unable to take the necessary steps to prevent contact with HPV or HIV.

Poverty is also connected to gender based violence in which women across all ages experience horrendous acts such as rape and abuse. These acts are more prevalent in poorer countries. Young girls are most vulnerable to abuse. It is suggested that the government should roll out programs to ensure that women have access to health information and healthcare facilities. Robust social welfare systems that proactively address the needs of poor and vulnerable members of society would go a long way in improving healthcare for all.

5. Conclusion

Cancer survival is related to the quality of early diagnosis, treatment and clinical follow-up in any given setting. Striking differences in cancer survival between countries, or between distinct populations within a country, reflect the huge inequalities, inaccessibility and availability of cancer healthcare services for the poor. Poor survival rates emphasize the importance and urgent need for improvement of cancer health services in Sub-Saharan African countries. As argued throughout this work, South Africa is one of the countries with financial disparities in its health system. As such it would make sense that affordable preventative measures, for example administration of hysterectomy for HIV infected women, are more prioritized over the costly treatment illnesses in the advanced stage. In conclusion, it is held that it would be just to offer hysterectomies to HIV positive women in light limitation of resources in South Africa. Such a move would eventually save costs for the state and afford HIV infected women realization of their right to healthcare.

Bibliography

Books

1. Carstens P and Pearmain D (2007) *Foundational Principles of South African Medical Law*, Butterworths LexisNexis, South Africa.
2. R. James *et al* (2003), *Danforth's Obstetrics and Gynecology* (9th Edition), Lippincott Williams & Wilkins Publishers.
3. DT Jamison *et al*, (2006), *Disease Control Priorities in Developing Countries* (2nd Edition), Oxford University: Press New York.
4. Strauss SA *Doctor* (1991) *Patient and the law*, JL van Schaik (Pty) Ltd. Pretoria, South Africa.

Journal Articles

1. Adam Y, *et al*. *Cancer. BMC*, No. 8: 211, (2008).
2. MH Botha and G Dreyer, Guidelines for cervical cancer screening in South Africa, *Southern African Journal of Gynaecological Oncology*, No. 9(1), (2017).
3. Cain JM *et al*, Control of cervical cancer: Women's options and rights, (2009) *International Journal of Gynecology and Obstetrics* 106 (2009).
4. Castle PE *et al*, Treatment of cervical intraepithelial lesions, *International Journal of Gynaecology and Obstetrics*, No. 138 (Suppl. 1), (2017).
5. Denny L *et al*, Human Papillomavirus-Based Cervical Cancer Prevention: Long-term Results of a Randomized Screening Trial. *Journal of the National Cancer Institute*, Volume 102, No. 20, (2010).
6. Denny L, Cervical Cancer: Prevention and Treatment, *Journal of Discovery Medicine*, No. 14(75), (2012).
7. F. Erdmann *et al*, Childhood cancer incidence patterns by race, sex and age for 2000–2006: A report from the South African National Cancer Registry, *International Journal of Cancer*, No. 136, (2015).
8. Fong Ha Jennifer, Doctor-Patient Communication: A Review, *The Ochsner Journal*, No. 10, (2010).

9. Fonn S, Human Resource Requirements for Cervical Screening – who do we need where? *South African Medical Journal*, (2003) Volume 93, No. 12.
10. Garg S, Management of Evasive Cervical Cancer After Simple Hysterectomy 367 - 371. *Journal of Obstetrics and Gynaecology India* (2004), Volume 54, No 4.
11. Ghebre RG et al, Cervical cancer control in HIV-infected women: Past, present and future, *Gynecologic Oncology Reports* No. 21, (2017).
12. Goldie S.J. et al. Projected clinical benefits and cost-effectiveness of a human papillomavirus 16/18 vaccine. *Journal of International Cancer Institute*, (2004).
13. Jordan S et al, A Review of Cervical Cancer in South Africa: Previous, Current and Future. *Health Care Current Reviews* (2016), Volume 4:4.
14. LM Kester et al, A National Study of HPV Vaccination of Adolescent Girls: Rates, Predictors, and Reasons for Non-vaccination, *Maternal and Child Health Journal*, No. 17(5), (July 2013).
15. Kim JJ et al, Model-Based Impact and Cost-Effectiveness of Cervical Cancer Prevention in Sub-Saharan Africa, *Vaccine* (2013), 31S.
16. Kim SM, Human papilloma virus in oral cancer, *Journal of Korean Association Oral Maxillofacial Surgery*, No. 42, (2016).
17. Lowry AJ and Sweeney KJ, The Role of Prophylactic Oophorectomy in the Management of Hereditary Breast & Ovarian Cancer Syndrome, (2012). *Department of Surgery, National University of Ireland Galway*.
18. Massad L. Stewart et al, 2012 Updated Consensus Guidelines for the Management of Abnormal Cervical Cancer Screening Tests and Cancer Precursors, *Journal of Lower Genital Tract Disease*, Volume 17, No. 5, (2013),
19. Mohapatra SC and Sengupta P, Health Programs in a Developing Country - why do we Fail? *Health Systems and Policy Research* Volume. 3 No. 3: 27, (2016).
20. Moodley M, Cervical Cancer in Southern Africa: The challenges. *South African Journal of Gynaecological Oncology*, Volume 1, No. 1, (2009).
21. Pytynia KB et al, *Epidemiology of HPV-associated oropharyngeal cancer*, *Journal of Oral Oncology*, No. 50 (5), (May 2014).
22. Richter K, Paradigm shift needed for cervical cancer: HPV infection is the real epidemic, *South African Medical Journal*, May, Vol. 103, No. 5, (2013).

23. Sankaranarayanan R *et al*, Infrastructure Requirements for Human Papillomavirus Vaccination and Cervical Cancer Screening in Sub-Saharan Africa, *Vaccine* (2013).
24. Sartorius K, The future cost of cancer in South Africa: An interdisciplinary cost management strategy, *South African Medical Journal*, Vol. 106, No. 10, October, (2016).
25. Tomlinson C, Reforming South Africa's procedures for granting patents to improve medicine access, *South African Medical Journal*, No. 9, Volume 105, (September 2015).
26. Van Minh H. *et al*, Cervical cancer treatment costs and cost effectiveness analysis of human papillomavirus vaccination in Vietnam: a PRIME modeling study, *BMC Health Services Research*, No. 17:353, (2017), p 3 – 7.
27. Williams FS *et al*, Treatment of cervical carcinoma in situ in HIV positive women. *International Journal of Gynecology & Obstetrics*, Volume 71, (2000).
28. Zetola N, *et al*, Collision of Three Pandemics: The Coexistence of Cervical Cancer, HIV Infection, and Prior Tuberculosis in the Sub-Saharan Country of Botswana, *Journal of Global Oncology*, Volume 2, Issue 1, February, (2016).

Legal Instruments and Public Reports

1. Cervical Cancer Screening in Developing Countries: Report of a WHO Consultation. Available on: http://www.who.int/cancer/media/en/cancer_cervical_37321.pdf. Accessed on 25 October 2017.
2. Constitution of the Republic of South Africa, 1996.
3. Global Aids Update 2016, UNAIDS. Available on: www.afro.who.int.org. Accessed on 23 October 2017.
4. HIV/AIDS and The Law, A resource manual 2nd Edition (2001).
5. South African HIV Survey. Available on: www.hsrb.ac.za. Accessed on 24 October 2017.
6. Statistical Release: Mid-year Population Estimates. Available on: www.statssa.gov.za. Accessed on 23 October 2017.

7. CESCR (UN Committee on Economic, Social and Cultural Rights) General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12). Adopted at the Twenty-second Session of the Committee on Economic, Social and Cultural Rights, on 11 August 2000 (Contained in Document E/C.12/2000/4).
8. Constitution of World Health Organization of 2014.

Websites Visited

1. <http://theconversation.com/failure-to-set-up-affordable-cervical-cancer-tests-costs-south-africa-43378>. Masukume G, Failure to set up affordable cervical cancer tests costs South Africa. Available on Accessed 25 October 2017.
2. <https://www.wits.ac.za/news/latest-news/general-news/2015/2015-07/cervical-cancer-too-expensive.html>. Masukume G, Cervical Cancer tests too expensive. Accessed on 18 October 2017.
3. <http://www.unaids.org/en/regionscountries/countries/southafrica>. United Nations Programme in Aids. Accessed 16 February 2019.
4. <https://www.cancer.gov/publications/dictionaries/cancer-terms/def/invasive-cervical-cancer>. National Cancer Institute. Accessed: 16 February 2019.
5. <https://www.cancer.org/cancer/cervicalcancer/causes-risks-prevention/prevention.html>. American Cancer Society. Accessed on: 16 February 2019.
6. <https://www.sun.ac.za/english/Lists/news/DispForm.aspx?ID=6210>. V Sewram, The Cancer conundrum, Stellenbosch University. Available on: Accessed on: 20 February 2019.
7. <https://www.cansa.org.za/new-vaccines-preventing-cervical-cancer/>. Cancer Association of South Africa (CANSA). Available on: Accessed on: 23 February 2019.
8. <https://www.cansa.org.za/new-vaccines-preventing-cervical-cancer/>. Cancer Association of South Africa (CANSA). Accessed on: 23 February 2019.