

**RESEARCH PROPOSAL**

**EVALUATION OF THE CERVICAL CANCER SCREENING PROGRAMME AT  
HARARE CENTRAL HOSPITAL'S POSTNATAL CLINIC**

**BY**

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# CHAPTER 1

## INTRODUCTION

### 1.1 Statement of the problem

Carcinoma of the cervix is the commonest cancer in Zimbabwean women <sup>1</sup>. It accounts for 78% of all gynaecological malignancies referred to Harare Central Hospital <sup>2</sup> and 76% of all the cases of carcinoma of the cervix present at an advanced stage. Cervical cancer accounts for 40% of all deaths from gynaecological malignancies at Harare Central Hospital <sup>2</sup>.

Worldwide half a million people die of cervical cancer and 80% of these deaths occur in developing countries<sup>23, 33</sup>. This is very disturbing as cervical cancer is a highly preventable disease.

There is a sharp contrast in the incidence rates of cervical cancer between developed and developing countries which is due largely to the presence of effective screening and treatment programmes for early preinvasive lesions in most developed countries. In Zimbabwe there is no systematic cervical screening programme and the incidence of preinvasive cancer remains unknown.

As populations from developing countries age during the coming decades the number of cervical cancer cases is likely to increase significantly unless screening programmes are established to identify and treat women with precancerous lesions. Furthermore, women with human-immunodeficiency virus (HIV) - related immunosuppression may be at an increased risk of cervical cancer especially in younger women where the prevalence of HIV infection is high.

This retrospective study reviews the results of the cervical cancer screening programme since its introduction at Harare Central Hospital's Post Natal clinic.

## **LITERATURE REVIEW**

Invasive cancer of the cervix is a preventable disease because early detection of asymptomatic CIN lesions, will in the majority of cases eliminate invasive disease.

Cervico-vaginal cytology, known as the Pap smear, is the most effective screening test in medical oncology. Introduced by Dr. George Papanicolaou in 1940, the Pap smear is now being recognised as a major contributor to the remarkable decrease in cervical cancer morbidity and mortality among women throughout the world if a properly organised program is implemented.

In the Nordic countries their results indicated that an organised screening program that achieves a wide coverage of ages was a more important determinant of risk reduction than the frequency of screening, with every effort being made to reach those at higher risk of developing invasive cancer<sup>(3)</sup>. Their invasive cervical cancer incidence and mortality have been reduced by as much as 60-70% through national screening programmes<sup>(4)</sup>.

Nevertheless, in developing countries cervical cancer still occurs at epidemic proportions, where an estimated 460 000 new cases per annum are diagnosed. This represents about 77 percent of the world's cervical cancer cases<sup>(5)</sup>. In most developing countries cervical cancer screening programmes are not well established and usually the screening is done opportunistically in conjunction with public antenatal, and postnatal services or FP services.

Another frightening statistic is the prevalence of CIN among women of developing countries.

A study conducted in Southern Africa showed that approximately 41 per 1000 black women attending primary health centres in an urban area will have major abnormalities on cervical smearing e.g 28 per 1000 had CIN and 13 per 1000 had invasive cervical cancer<sup>(6)</sup>.

The widely held view that cervical cancer is related to sexual behaviour and is sexually transmitted has resulted in many studies of the lifestyle of patients. HPV infection and HIV infection has been associated with the epidemiology of cervical cancer to the extent that carcinoma of the cervix is now regarded as an AIDS defining disease. This raises the question pertaining to the age at which cervical screening should commence. In one study 1.6 percent of teenagers screened had abnormal cervical cytology and within the 10 years that they were monitored 65 percent had reverted to normal, 20 percent remained unchanged and 15 percent progressed to invasive cervical disease before the age of 21 years <sup>(7)</sup>.

Three studies have shown that of the teenagers referred for Colposcopic Biopsy because of abnormal cervical cytology 6.5 percent to 22 percent were found to have CIN2 or CIN3 (HGSIC) but no microinvasive or invasive lesions were identified. This emphasised that in teenagers most of the abnormal findings, are minor, consisting of borderline cytology with histological evidence of HPV infection and mild dysplasia <sup>(8-10)</sup>. The generally minor nature of the cervical pathology and their greater potential for regression may provide the reason why invasive cervical cancer is uncommon in patients less than 25 years of age. Thus routine screening of teenagers is unlikely to result in any significant impact on the morbidity and mortality from cervical cancer. In developed countries it has been recommended that routine screening should commence at 20 years of age and continue to the age of 60 years <sup>(11)</sup>. In developing countries, where resources are limited, it may however be cost effective to delay the onset of screening to the age of 25 years but ideally all sexually active women should be screened because of the high prevalence of HPV and HIV infection in these developing countries.

If the quality of cytology service is high three yearly smears are virtually as effective as annual smears. WHO (1986) illustrated the effect of different screening intervals on the estimated risk of invasive cervical cancer in women aged 35 - 64 years who had had a negative smear at 35 years <sup>(12)</sup>. (see Table I)

**Table 1**

Screening Interval	% Reduction in Incidence	No of Pap Smear
1 Year	93.3%	30
2 Years	93.3%	15
3 Years	91.4%	10
5 Years	83.9%	6
10 Years	64.2%	3

The table shows that the reduction in incidence from screening every 2 years is as great as from annual screening and that the reduction in incidence from screening every 3 years is almost as great. Also screening every 5 years offers some substantial benefit. Even screening women once in their lifetime between the ages of 35-45 years have also been found to reduce the incidence of cervical cancer prevention programmes against the background of limited resources. WHO has recommended that screening less frequently when combined with appropriate treatment can have a major public impact and may be an appropriate strategy for countries who are initiating cervical cancer prevention programmes. Van Oortman et al have shown that screening intervals after two negative smears could be longer than three years <sup>(14)</sup> and also that there would appear to be little benefit in continuing cervical screening in women over the age of 50 years who have had regular negative smears <sup>(15)</sup>. The release of this low risk group from the cervical cancer screening programme could alleviate anxiety and could enable re-allocation of resources to target better high risk women.

However, it may be prudent still to advocate annual Pap smears in high risk groups i.e. patients with multiple sexual partners, history of STDs, particularly if they have been shown to have HPV subtypes 16, 18, 45 and 56 or immunosuppressed and immunodeficient patients <sup>(16)</sup>. The oncogenic HPV types 16, 18 were twice as common in HIV positive patients at a gynaecology inpatient department in Tanzania <sup>(17)</sup>. Similar correlations have appeared in Zaire, Malawi and Senegal. The cervical dysplasia may only be associated with HIV infection when signs of

immunosuppression are present including decreasing CD4 counts <sup>(18)</sup>. Overall, the available evidence suggests the possibility of a rising incidence and increasing mortality from cervical cancer as the AIDS epidemic escalates in Africa <sup>(19)</sup> and so hence the need for annual pap smears in this high risk groups.

Nevertheless, the Pap smear testing has an estimated false positive rate of less than 1 percent but a false-negative rate ranging from 15-40 percent. Strategies that reduce this high false negative rate of Pap smear have been employed and these are:

- a) performing a second Pap smear within 3 months of an original negative result.
- b) cervicography which act as an adjunct to routine screen Pap tests and when used collectively with Pap smear may identify nearly 2 ½ times the number of women with dysplasia as pap smear alone <sup>(20)</sup>.
- c) PAPANET screening system <sup>(21)</sup> though this may not be affordable in most developing countries.

In developing countries where nationwide cytology screening programs have not been feasible for many years primarily because of financial constraints and paucity of staff, an alternative strategy to mass cytology screening that may prove valuable is direct inspection of the cervix <sup>(22)</sup>. Speculum assisted visual examination of the cervix identified women with signs of high risk characteristics i.e. cervical erosion that bled on contact, small visible growths or a suspicious looking cervix. In the study group analysis in India 11.4 per cent had these features and were referred for cytological and colposcopic evaluation.

There are 3 visual inspections of the cervix approaches that are currently being evaluated in South Africa, USA and here in Zimbabwe and these are:

- (i) Down-staging - i.e. clinical examination of the cervix to detect signs of early disease or advanced disease. This has a sensitivity rate of 50-70% but may give false positive rates causing unnecessary anxiety and inappropriate treatment.

- (ii) Unaided visual inspection of the cervix (UVI) for signs of high grade lesions and cancer with the aid of acetic acid of which the abnormal areas will be acetowhite.
- (iii) Aided visual inspection (AVI) of the cervix for signs of high grade lesions or cancer with the aid of acetic acid as well as a low power magnifying device.

In an Indonesian study UVI was shown to have a sensitivity rate of 50% whilst AVI had a sensitivity rate of 95.8% and specificity rate of 99.7% <sup>(23)</sup>. The advantages of these visual inspection of the cervix methods are that nurses, paramedics or physicians could be trained to use them effectively and such methods can be adopted in our rural areas where cytological services are limited.

Any patient with an abnormal Pap smear should undergo a colposcopic evaluation and Biopsy to confirm the presence of HGSIL or exclude invasive disease. If the later are confirmed then local destruction of the lesion is instituted. However, optimum management of cervical smears with LGSIL remains highly contentious. The debate centres on whether a policy of immediate colposcopy and treatment is better than continuing cytological surveillance. Advocates for immediate colposcopy argue that 12 per cent of LGSIL pap smears will have underlying HGSIL and 0.5% have invasive disease <sup>(24)</sup> and that patient default from cervical cytological surveillance is reduced. They also argue that there is still at present no effective method that will identify definitively which low grade lesions lack the capacity to progress to HGSIL.

In developing countries the policy of immediate colposcopy for any abnormal pap smear may not be feasible due to limited colposcopic services. One study showed a strong relationship between involvement of the family physician and compliance with follow-up after an abnormal Pap smear <sup>(25)</sup>.

One Nigerian study reported that only 60% women with positive Pap smears could be located for colposcopic follow-up in an urban Nigerian population <sup>(26)</sup>.

### 1.3 Objectives of the Study

The study was undertaken to evaluate the effectiveness of our six week postnatal cervical cancer screening programme since none had been done ever since it had been in practice.

The specific objectives of the study were:-

- i) To find out the targetted age group of the women screened.
- ii) To determine how many women who are screened do have positive smears i.e. the prevalence of positive smears in the population screened.
- iii) To evaluate and assess the effectiveness of the follow up method used to contact those with positive smears who were advised to report to Spilhaus Family Planning Centre for confirmatory Colposcopic diagnosis and treatment.

It is hoped that the study will come up with some positive and negative aspects of our opportunistic screening programme and that some recommendation may be made about the programme. The outcome of this study may provide guidelines in formulating a National Cervical Cancer screening programme since none is in existence to date despite the fact that this should be accorded a very high priority considering the high incidence, mortality and morbidity caused by cervical cancer in this country. Existing resources have typically been allocated to the not so effective high cost treatments for late stage disease rather than low cost, effective diagnostic screening and treatment of preinvasive cervical cancer lesions.

## 1.4 Statement of the Hypothesis

The selective and opportunistic cervical cancer screening programme at Harare Maternity Hospital Postnatal Clinic is yielding poor results because it is too limited and confined to a small group of postnatal women and is bedevilled by problems of follow up for those with positive smear who need further Colposcopic evaluation and treatment.

## 1.5 Definition of terms

HIV-	human immunodeficiency virus
WHO -	World Health Organisation
HPV-	Human Papilloma Virus
Pap -	Papanicolaou
% -	Percent
USA-	United States of America
UVI-	Unaided Visual Inspection
AVI-	Aided Visual Inspection
CIN-	Cervical intraepithelial neoplasm
i.e.-	that is
HMH-	Harare Maternity Hospital
PNC-	Post Natal Clinic
LGSIL-	Low Grade Squamous Intraepithelial Lesion
HGSIL-	High Grade Squamous Intraepithelial Lesion
CIS-	Carcinoma in situ
FPC-	Family Planning Clinic
LLETZ -	Large Loop Excision of the Transformation Zone

## CHAPTER TWO

### 2.1 Methodology

This is a retrospective data analysis of the Pap Smears taken at Harare Maternity Hospital's Post Natal Clinic from January 1996 to February 1997. However there was no data available for November and December 1996 due to the national strike by the Health Personnel which disrupted the services.

### 2.2 Subjects

The women who had Pap Smears done were those who were asked to attend the postnatal clinic six weeks post delivery. These were the antenatal booked or referred women from local Municipality Clinics who would have had Caesarean section deliveries, preterm deliveries, stillbirths, neonatal deaths or any medical complication with the current pregnancy eg diabetes mellitus, pre-eclampsia, eclampsia. Therefore women excluded from the 6<sup>th</sup> week postnatal visit and hence the Pap Smears, were those originally booked with the Harare Maternity Hospital but had normal vaginal delivery and those referred from municipality clinics but had uneventful deliveries. These women were advised to attend their local clinics for their 6<sup>th</sup> week postnatal visit. Also women who were referred from district hospitals for various reasons were advised to attend their local hospital for the postnatal clinic. Therefore, of the monthly average 2000 women originally booked at Harare Maternity Hospital only about 200 (10%) would be asked to attend the 6<sup>th</sup> week postnatal clinic per month.

## 2.3 Procedure

The total number of smears taken from February 1996 to February 1997 was determined from the postnatal register. The number of smears which were positive i.e. CIN I, II, III and also those that were reported as acellular, atypical and haemorrhagic were counted from the register.

The number of abnormal smears within each grade of CIN severity was noted. The women who were screened were divided into eight different age groups i.e. below 20 years, 20-24 years, 25-29 years, 30-34 years, 35-39 years, 40-44 years, 45-49 years and lastly those women whose age was not stated. Within each age group a count was made of the total number of Pap Smears taken and those which were positive. In addition each grade of CIN abnormality was put against these different age groups.

The percentage rate of the positive smears was calculated and the incidence rate of each degree of CIN lesions compiled. The prevalence rate of the positive smears in each age group was calculated and the incidence rates of the CIN lesions per each age group was also calculated.

### **RESULTS OF PAP SMEARS**

2477 women had pap smears taken from January 1996 to February 1997 out of approximately

20 000 women who delivered at HMH. Thus only 12.38% of the mothers who delivered at HMH had pap smears done at the PNC. Of the 2477 women screened 133 were found to have positive smears. This gives a percentage rate of positive smears of only 5.37% (see figure 1). Figure 2 shows that of the 133 positive smears 98 (73.68%) were of CIN I lesions, 32 (24.06%) of CIN II and only 3 (2.26%) were of CIN III lesions.

Most of the women screened were relatively young. The majority of women that were screened (862) were in the 20-24 year age group representing a 34.80% of the total women screened (see figure 3). The second commonest age group of women screened was the 25-29 years who made a 26.12% portion of the women screened, then followed by the 30-34 year olds who were 12.80%, the under 20 years were 10% and the 35-39 year olds were 8.36%. Only 29 women were screened in the 40-44 year age group and just 7 women were screened in the 45-49 year age group. However there were 159 women screened (6.42%) whose ages were not stated at all.

The highest number of positive smears were found in the 25-29 year age group in which there were 49 positive smears out of the total 133 (see figure 3). There were 34 positive smears in the 20-24 year age group and 6 positive smears in women over the age of 35 years. There were less women screened over the age of 35 years (243 out of 2477 i.e. 9.8%).

An analysis of the grades of CIN lesions showed that of the 98 CIN I lesions most 41(41.54%) were picked up in the 25-29 year age group, whilst 24 (24.49%) were found in the 20-24 year age group, 11.22% in the 30-34 year group, 10 (10.20%) in those under 20 years and just 4 (4%) in those above 35 years (figure 4).

There were a total of 32 women screened with CIN II lesions. Most CIN II lesions 10 (31.25%) were however found in the 20-24 year age group , 6(18.75%) were in both the 25-29 year and 30-34 year age groups, 5 (15.62%) in those below 20 years and only 2 (6.26%) in those above 35 years. Of the 3 women who had CIN III lesions two of them were in the 25-29 year age group whilst the third one had no age stated. All in all 35 of the 2477 women screened had HGSIL.

These 35 women were recommended for further follow-up by Colposcopic examination. They were all sent letters inviting them to attend the colposcopy clinic at Spilhaus FPC but only 5 women attended the colposcopy clinic. This gives the follow up success rate of only 14.29%.

## DISCUSSION

The results of this study highlighted the following points:

### 1. The Screening Criteria are too selective

The HMH postnatal screening programme is too selective. Only 12.38% of the mothers who delivered at HMH had cervical cancer screening at the PNC. This figure is quite low and is explained by the fact that most uncomplicated deliveries are referred back to their nearest health institutions for the post natal visits and are therefore excluded from the cervical cancer screening programme. There is room therefore to include more women into the screening programme especially given the 30% prevalence rates of HIV infection in our antenatal women and that they are of low socio-economic status. Antenatal screening would increase the population of women screened but is limited by late registration of mothers, complications of pregnancy at initial presentation and the interpretation of smears. Also delays in reporting would require visits beyond the six weeks post natal visit for triage and therapy.

Perkin et al showed that achievement of higher attendance rates for screening is important to the outcome of a screening programme (1).

### 2. The Target Population Screened

Most women who are screened are of the young age group. The majority of those screened were in the 20 - 24 age group and these constituted 34.80% of the total women screened whilst 26.12% of the women screened were in the 25 - 29 years age group. Therefore, all in all 60% of the women screened were between 20 - 29 years old whilst only 9.8% of the population screened were women 35 years and above. The target population in this screening exercise is therefore, women between 20 - 29 years old. This is not surprising since pregnancy is being used as the entry point for screening and women who are 35 years and older are less likely to get pregnant and are therefore, unlikely to be included in this screening programme. This is in contrast with most literature review that recommend that screening should target women above 35 years as screening young women

leads to loss of efficiency and higher rates of LGSIL <sup>(28)</sup>

### 3. **Abnormal Smears**

Abnormal cytology i.e both LGSIL and HGSIL was reported in 5.37%. This figure is comparable to the rate of 8% of positive smear found at a colposcopy clinic at HCH <sup>(29)</sup> and that of 6.5% found on a South African Study <sup>(30)</sup>.

Of the 5.37% positive smears 73.68% were of CIN I, 24.06% CIN II and 2.26% CIN III. The 26.32% of the positive smear were of HGSIL. The 20 - 29 year old women were found to have the highest number of both LGSIL and HGSIL and these women need to be carefully followed up over time. Another interesting outcome of the study was that even women below 20 years had some risk of abnormal smears as 10.20% of CIN I lesions and 15.62% of CIN II lesions were diagnosed in them. This percentage rate of abnormal smears was comparable with those in women in the 30 - 34 age group. However, the women 35 years and above has the lowest number of positive smears. They accounted for 4% of CIN I lesions and 6.25% of CIN II lesions whilst none had CIN III lesion. This high number of abnormal smears in the women under 30 years old could be explained by the facts that the post natal screening programme mainly targeted this age population of women or it could be that we are now witnessing a new trend of cervical dysplasia in the younger women due to their earlier onset of sexual activity and the relatively high prevalence of HPV and HIV infections in them.

The study also support the concept that every sexually active women should be screened for cervical cancer despite her age. Van des Graat et al showed that the most important compounding risk factor of carcinoma of the cervix is the age at first sexual intercourse <sup>(31)</sup>. In our population most girls are becoming sexually active as early as the age of 15 years and are therefore at high risk of developing carcinoma of the cervix by the time they are 35 years old.

#### 4. Follow Up:

There was a deplorably poor success rate of recalling patients with HGSIL for colposcopic evaluation and treatment. Only 14.29%, women responded to the recall system which was by letter invitation. Problems with follow up and contact tracing are inherent in most screening programmes everywhere. In this study the following features were noted as contributory factors for the poor results of the recall system.

(i) Poor data or incomplete personal data entry. Two women with positive smears were not entered at all for follow up and hence were missed for colposcopy. There were numerous cases where personal details such as hospital numbers, patients' surnames and addresses were not clearly written down or sometimes omitted out on the laboratory request forms making it difficult in tracing those women with abnormal smears.

Given the financial resources this could be improved by training the personnel of the need for correct data entry and perhaps by computerising the system.

(ii) The notification system. The letter notification system being used has its own flaws because it is difficult to establish whether or not the client has received the letter. It then becomes difficult to know whether the patient has defaulted the colposcopy follow up clinic deliberately or because she did not receive the letter. There is no secondary mechanism in place of establishing the cause of the default. It would have been better if personalised home visits were made to those who would not have responded to the letter notification system but perhaps this is too expensive given our limited financial resources.

(iii) There is also no method in place of identifying the defaulters. The current follow up system does not have a method of knowing who has responded or not. There is no register kept of women who would have responded or defaulted. If a register was kept in liaison with the colposcopy clinic at Spilhouse Family Planning Clinic, then it would be easier to identify the defaulters and may be personalised home visits would be made to track down the defaulters.

- (iv) The study also showed that there is no system of tracking down the defaulters if by chance they happen to be identified. Personalised home visits of the defaulters could be ideal but is too expensive

The high default rate of 85% could be explained by that some of the women could have changed addresses by the time the Pap Smear results are out and letters written to them. Also some of these women could have migrated out of town to rural areas after delivery as they would have come to book and deliver in town where there are better health facilities. Another reason for defaulting could be lack of finances to pay for transport as most of our booked women are in the low socio-economic status and are therefore financially marginalised. Though the above mentioned reasons for default could not be established in this study since it was retrospective, it would be very valuable to do a prospective study. The results of the prospective study will not only be helpful in improving our screening programme but will definitely be incorporated into the formulation of a National Cervical Cancer screening follow up programme.

Bishop et al showed that the key reasons for poor follow up were transport difficulties, long delays between diagnosis and treatment, poor communication mechanisms, the misunderstanding that screening constitutes treatment and fear of receiving bad news or the fear of treatment<sup>(23)</sup>. His findings could well be true in our society.

One solution of dealing with this high default rates will be the implementation of a single visit cervical neoplasia screening and intervention programme. This strategy would be ideal but I don't think it will be feasible in a developing country like ours where we have limited financial and human resources. The see and treat strategy may be feasible using cryotherapy.

In summary the cervical cancer screening programme at HMH PNC showed that

- (i) it is a worthwhile exercise as 5.37% of the women were picked to have either low grade or high grade squamous intraepithelial lesions.
- (ii) the programme targets women between 20 - 30 years old.

- (iii) women between 20 - 30 years had the highest numbers of both low grade and high grade cervical dysplasias.
- (iv) every sexually active woman should be screened as women below 20 years were also found to have both low grade and high grade squamous intraepithelial lesions.

However, there were some shortcomings with the programme and these were:-

- (a) it is too selective as only 12.38% of the women who deliver at HMH were screened.
- (b) there is a high rate of defaulters (85%) for colposcopic evaluation and treatment.
- (c) there is no mechanism of identifying the defaulters since there no register of those who would have responded or not to the letter notification system.
- (d) There is no active strategy of tracking down the defaulters.

There is therefore, need for this programme to be improved to achieve better results. The programme can be improved by:-

- (i) Screening more women especially those in the 20 - 30 year age group.
- (ii) Correct data entry on the cytological request form.
- (ii) Maintaining a good register of those who would have responded or not to the letter recall system.
- (iv) Reducing the number of defaulters by:-
  - (a) health education of the women especially of the need to come for colposcopic evaluation when summoned to do so.

- (b) having a more active and aggressive policy of tracking down the defaulters. The use of personalized home visits should be seriously considered eg. by using the system that is currently being used for any of the notifiable infectious diseases.

In conclusion the findings of this study and the adaptation of the recommendations suggested above could be useful in formulating a National cervical cancer screening programme. Firstly the national programme should aim to screen as many women as possible. This could be achieved by massive and aggressive health educational campaigns through the electronic and printing media, health providers, and politicians on the seriousness of cervical cancer. A National Cervical Cancer screening day could be established on which all women are advised to go for screening and treatment if their results are abnormal. The General Practitioners should be involved more in the screening programmes as it has been found that they achieve better attendance rates and compliance to the follow up recall systems <sup>(25)</sup>.

Secondly from the results of this study, the National Programme should aim to screen every sexually active women at least once before the age of 30 years. Although this will require huge resources, the programme could be streamlined with the application of various strategies to minimise costs. Where the resources are limited especially in the rural areas the following screening strategies could be used:-

- (i) screen all women at ages of 25, 35 and 45 or screening women every 5 years from the age of 20 years.
- (ii) The use of UVI or AVI for detecting precancerous lesions or early cervical cancers as they do not need extensive cytology services or specialist training. Those with suspicious lesions will be sent for colposcopy. Thirdly the full potential of General Practitioners for cervical screening should be exploited as they are fast becoming the main providers of primary health care in urban areas and more so where the national health delivery systems are collapsing due to inadequate

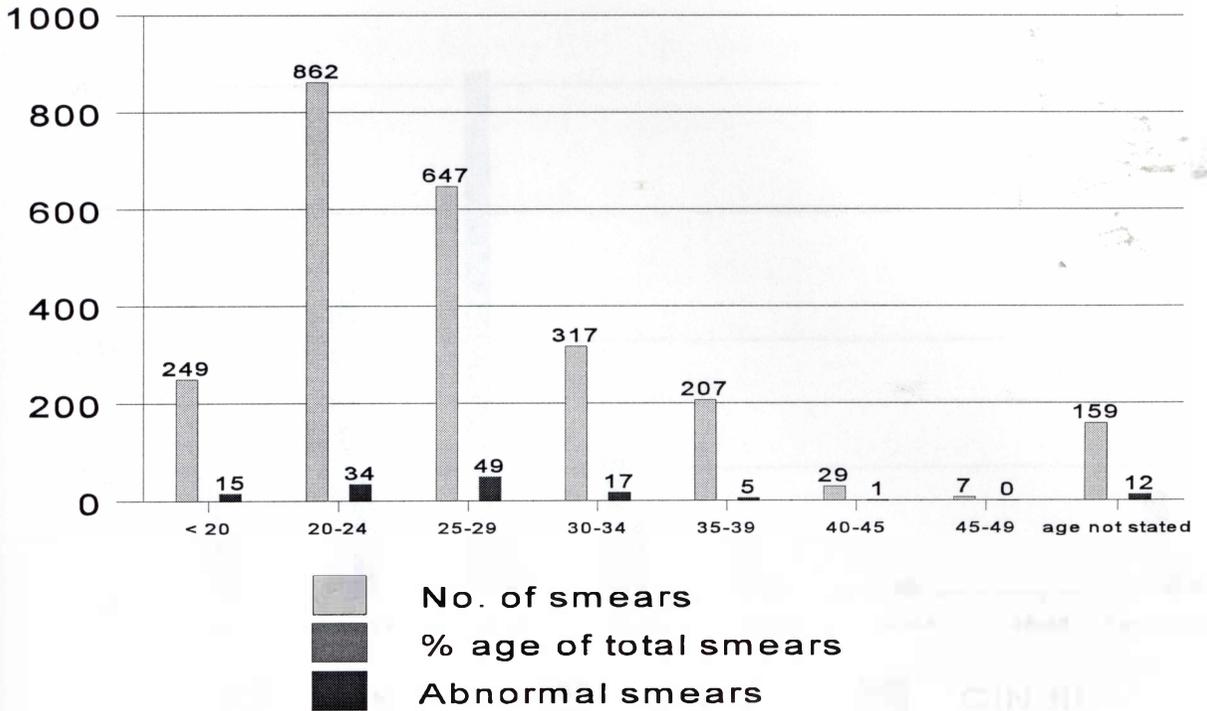
funding.

Fourthly the National Cervical Cancer screening programme should have in place good data entry and filing systems, efficient follow-up systems and colposcopic regional centres where the patients with positive smears are referred to for further colposcopic evaluation and treatment.

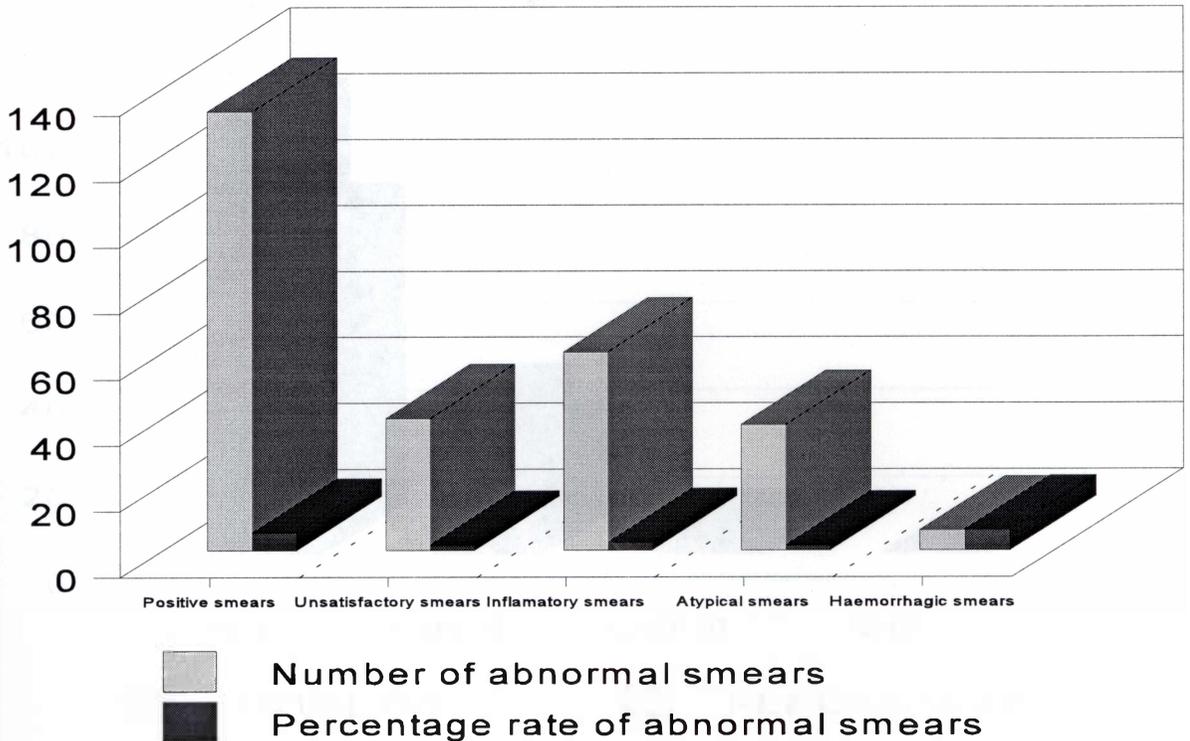
It has been estimated in Southern Africa that should such a programme be achieved there will be a 60% decline in the mortality from cervical cancer as patients with preinvasive disease would be appropriately referred for colposcopy and treatment modalities such as LLETZ <sup>(32)</sup>.

# RESULTS OF PAP SMEARS

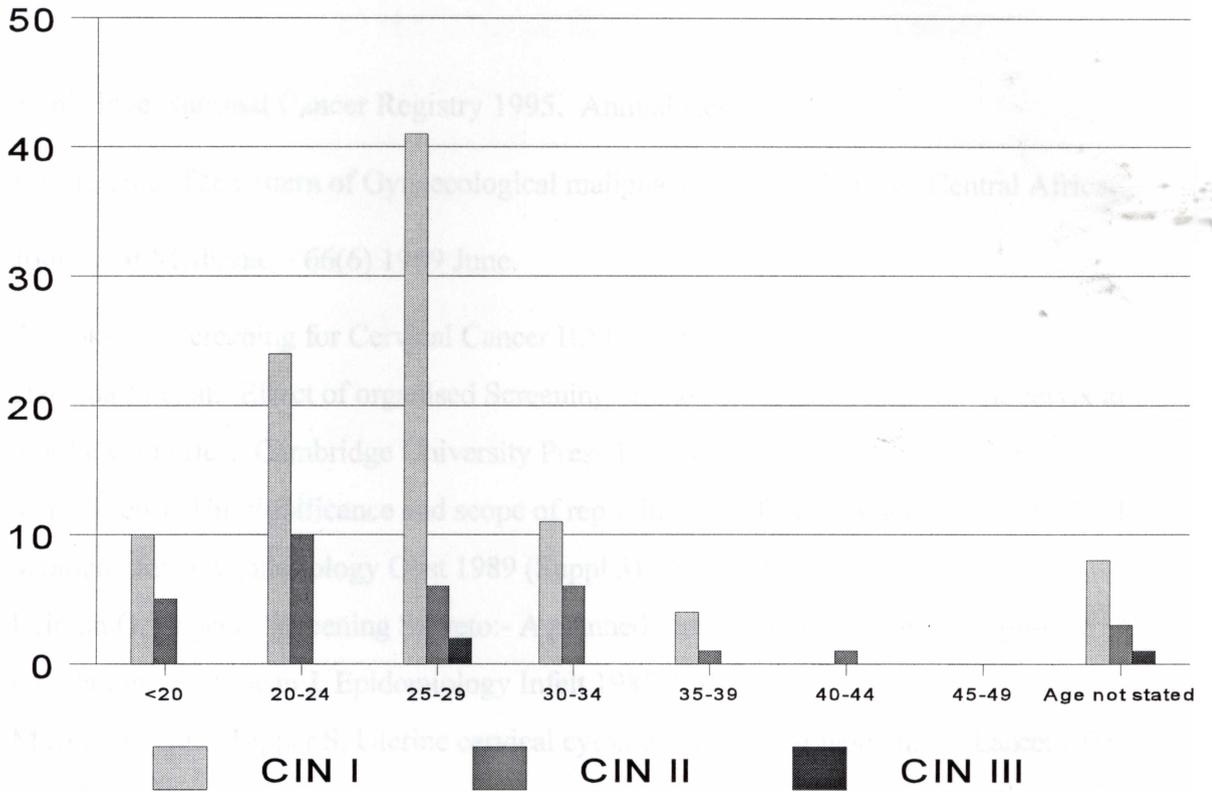
**Figure 1** Number of Smears taken and those found abnormal



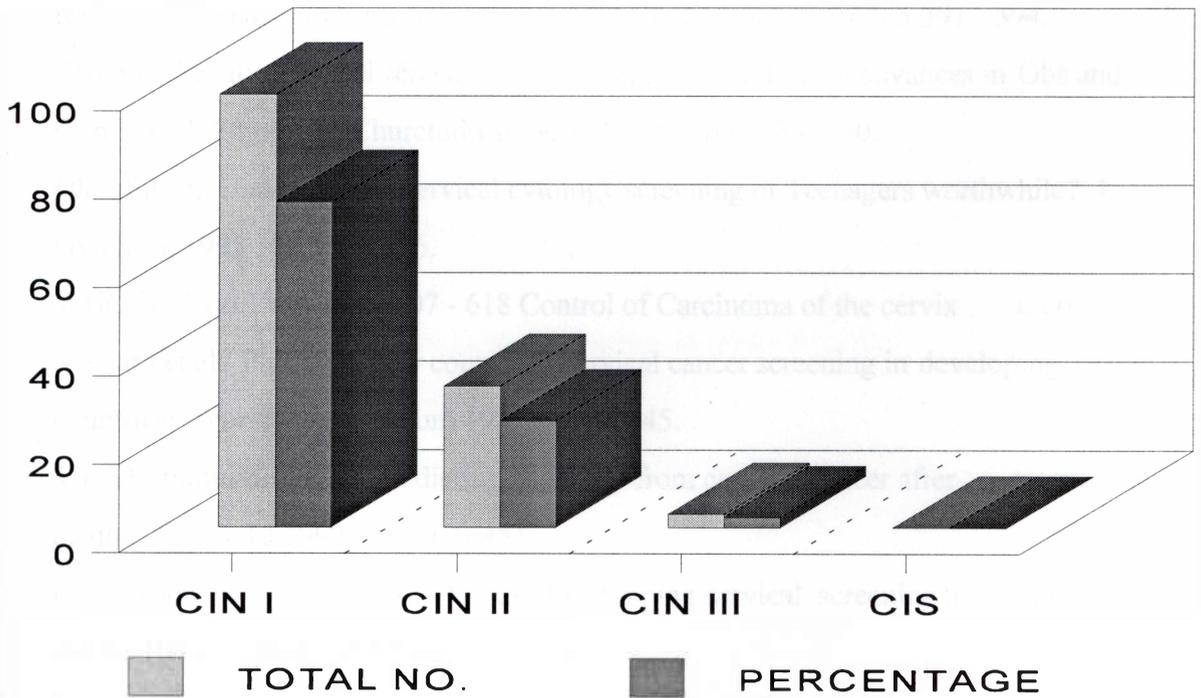
**Figure 2** Pap Smear Abnormalities



**Figure 3** Number of smears taken and Abnormal smears as per age group



**Figure 4** Grades of CIN by Age Group



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