The extent of cervical cancer screening in Mamelodi Provincial Health Clinics.

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DEDICATION

This research is dedicated to my family, for their love, support and patience.

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ABBREVIATIONS

ACCP:	Alliance for Cervical Cancer Prevention
AIDS:	Acquired Immune Deficiency Syndrome
AGUS:	Atypical Glandular cells of Undetermined Significance
ARV:	Anti Retro-viral
ASCUS:	Atypical Squamous Cells of Undetermined Significance
CHC:	Community Health Center
CHIP:	Cervical Health Implementation Project
CIN:	Cervical Intraepithelial Neoplasm
DHIS:	District Health Information System
DNA:	Deoxyribonucleic Acid
HAART:	Highly Active Anti-Retroviral Therapy
HIV:	Human Immune-deficiency Virus
HPV:	Human Papilloma Virus
HSIL:	High-grade Squamous Intra-epithelial Lesion
HST:	Health Systems Trust
IEC:	Information, Education and Communication
LSIL:	Low-grade Squamous Intra-epithelial Lesion
LLETZ:	Large Loop Excision of the Transformation Zone
NDoH:	National Department of Health
PHC:	Primary Health Care
PAHO:	Pan African Health Organization
STI:	Sexually Transmitted Infections
VIA:	Visual Inspection with Acetic acid
WHO:	World Health Organization
WHRU:	Women's Health Research Unit

ABSTRACT:

Title: The extent of cervical cancer screening in Mamelodi Provincial Clinics

BACKGROUND: Cervical cancer is the second most common malignancy in women worldwide, and the leading cause of mortality among women. It affects approximately 500 000 women each year with about 270 000 deaths. Almost 80% of the mortalities occur in developing countries. The National Department of Health in South Africa introduced a cervical cancer screening policy in the year 2000. The aim of the policy was to screen more that 70% of the women aged 30 – 59 by the end of 10 years. Women aged 30 – 59 years are offered 3 Pap smears per life time, with an interval of 10 years between the smears.

AIM: The aim of the study was to determine the uptake of cervical cancer screening among eligible women (age 30 – 59 years), their practice, knowledge and attitude, as well as the capacity of the facility and the service providers to offer cervical cancer screening service.

METHODS: A health systems descriptive study. A two stage sampling technique was done. Purposeful sampling of the healthcare facilities in the defined area was done, targeting the Provincial Health clinics. Records were reviewed at the facility to determine the percent of women aged 30 – 39 years, who used the facility and had Pap smears over the period: August 2003 to July 2007. Facility managers at the Holani clinic and Stanza Bopape Community Health Center were interviewed. Self administered questionnaires were distributed to doctors and professional nurses at both facilities. Questionnaires were also distributed to the women aged 30 – 59 years who visited the facilities during data collection to determine the knowledge, attitude and practice of these women concerning Pap smear. Data entry was done using Epi-Info and Microsoft Excel. Data was analyzed using STATA version 9. Methods applied

were frequencies, percentages and cross tabulations. Differences between groups were examined using Fisher's exact test and Chi-square test. Results were presented in tables and graphs.

RESULTS: Record review at Holani clinic indicated that the percent of women aged 30 – 59 years who had undergone Pap smears while attending clinic from January 2004 to July 2007 was 8%. Stanza Bopape had incomplete records. Only about 50% of the women interviewed had undergone Pap smear. Socio-demographic factors like age, education and employment did not have a significant effect on the knowledge, attitude and practice of cervical cancer screening by the targeted service users. Women of lower parity had undergone more Pap smears than those of higher parity. Women of lower parity had more knowledge about Pap smear (p-value=0.05). The knowledge and practice of Pap smear among women aged 30 – 59 years who attended the clinics were significantly associated with getting information from the nurse (p=0.01). Knowledge of the National Cervical Cancer Screening Policy by the service providers was limited. Both facilities had adequate resources for performing the procedure. The number of trained staff per facility was adequate for the performance of the procedure. There was enough privacy to do the procedure. Specimen transportation was adequate, and turn around time was acceptable.

CONCLUSION: The extent of Pap smear investigation at the facilities is inadequate. The Service Providers need to calculate the minimum number of Pap smears needed per day to reach the required targets. Nurses at the primary healthcare setting play a major role in improving the uptake of cervical cancer screening. There is a need to actively recruit women to come for Pap smear, while at the same time strengthening health education.

CHAPTER 1

1. Background

1.1. Introduction:

The National Guidelines for Cervical Cancer Screening Programme was introduced by the National Department of Health (NDoH) in 2000. The aim was to reduce the incidence and mortality of cervical cancer in South Africa by screening at least 70% of women aged 30 years to 59 years within 10 years of initiating the program. The reason for selecting the minimum age 30 years is to increase the efficiency of cervical cancer testing as the risk of the disease increase with age and the resources are limited. According to the National policy, every woman who uses the public health facilities is entitled to 3 free Pap Smears in her lifetime, starting from the age of 30 years, with an interval of 10 years between the tests. (1)(2).

The project for implementation was steered by the NDoH, Women's Health Research Unit (WHRU) of the University of Cape Town, Women's Health Project of the University of the Witwatersrand and Engender Health, USA. Implementation of the program was supposed to be integrated into the District Health System. (3). There are five components towards rendering a successful program:

- Strengthening the health system by improving resources
- Re-training of service providers at the primary care level
- Quality improvement in cytology laboratories
- Health education for service users, both within the facilities and in the community
- Active recruitment of target population by healthcare providers.

Strengthening the Health System by improving resources:

A primary healthcare facility should have privacy in the consulting rooms, with enough equipment for the procedure and proper infection control measures. The minimum equipment should include examination couch, a working examination light, vaginal specula, sterilizer / autoclave, swab holding forceps, Aylesbury spatula, glass slides, fixative spray, gloves, linen saver, cytology request forms, IEC materials, slide mailer and Pap Smear record book/sheet[3].

Re-training of Service Providers:

Most professional healthcare providers have been trained in the collection of Pap smear during their basic training, but since they may have spent a long time without doing one, they need to be re-trained to avoid inadequacy of smears. The re-training for Pap Smears is also included in the Primary Healthcare (PHC) training for nurses. The PHC training is a post basic training, and is usually aimed at nurses in the clinics or at district level.

Quality improvement in cytology laboratories:

Good communication between service providers and cytology personnel is important. Turn around time of specimen results should be minimal. It is essential for the cytology lab to receive adequate specimens, which are properly labeled and fixed. Reporting to clinic staff should be in a clear concise manner. Quality assurance in laboratories should be emphasized to ensure optimal performance of the program. The low sensitivity of Pap smears - 58% for intra-epithelial cervical neoplasia (range 30-87%) [4] necessitates rigorous adherence to the procedures and processes from the collection through to the processing and examination by a competent technician, of the cervical pap smears to yield optimal results.

Health education:

Health Educators should be trained on how to encourage women of the target group to have Pap Smears. Health education should be both facility-based, where women are informed while waiting for the service, and in the

community, by targeting certain occasions, e.g. awareness campaigns and church services, etc.

Active recruitment of target population by healthcare providers:

When the system is ready, with the resources available, in stock and controlled, trained staff, adequate privacy and healthcare workers re-trained where necessary, well demarcated referral system, then active recruiting of patients through health education and making use of missed opportunities is advised. Women of the target group coming to the clinic for family planning, baby clinic or chronic medication should be recruited for Pap smears, provided smears were not done in the preceding 10 years.

After the policy was introduced in 2001, training of Healthcare Providers was commenced. Nurses had to undergo training on Pap smear procedures, and how to invite women for Pap Smears. The department had to create enabling environment by adequately equipping health facilities and laboratories. Training of Laboratory staff was meant to improve cytology interpretation and to improve turn around time. By the year 2003, clinics and laboratories were supposed to be adequately resourced for implementing the policy.

CHAPTER 2

2. Literature Review

2.1. Epidemiology

Global extent

Cervical cancer remains a significant cause of mortality among women globally, even though it is the cancer with the greatest demonstrated potential for secondary prevention [5]. It is one of the most preventable and treatable cancers, since it takes many years to develop from the precursor lesion and remains for the major part localized. The slow progression of pre-cancerous lesion to cervical cancer provides a window of ten years or more to detect and treat a pre-cancerous lesion [6, 7]. It is one of the leading causes of mortality and morbidity in developing countries, and the second most common cancer among women worldwide (second to breast cancer). It comprises approximately 12% of all cancers in women [2]. More than 493 000 new cases were diagnosed, with more than 273 000 deaths in 2000. About 85% of these deaths occur in developing countries. [6][8] In Africa, an estimated 36 900 new cases are diagnosed each year [6]. In Uganda, it is the commonest malignancy of women, with over 80% of diagnosed patients in Mulango hospital presenting with advanced disease [9]. The age-standardized incidence rates for cervical cancer in Southern Africa, per 100 000 females of all ages are as follows: [10].

Lesotho: - 61.6

Swaziland: 58.9

South Africa: 37.5

Botswana: 30.4

Namibia: 22.2

Locally

The reported prevalence of cervical cancer for Black* women in South Africa is 40 per 100 000 [11]. At least 1 in 23 Black women will develop cervical cancer in her life time [7]. A total of 6061 new cases of cervical cancer were reported in South African cancer registry in 1998, representing 20% of all women cancers for that year. In 1999, 5203 new cases were reported, representing 17% of all women cancers for that year [12]. About 84% of all women presenting with cervical cancer in 1998-1999 were African women. [3]

Statistical notes from the department of health, however, indicated an average of 3387 new cases reported between 1993 and 1995, with 1497 deaths in 1994. They also reported a lifetime risk of 1 in 34 for Black females and 1 in 93 for White females. Incidence rates for cervical cancer in Black South Africans are reported to be similar to those found in the rest of Africa [13].

Current estimates are that annually, 6742 women are diagnosed with cervical cancer, and 3681 die from it. It is the first most frequent cancer among women aged 15 and 44 years [11]. The risk of developing cancer of the cervix increases with age, peaking at 136.4 per 100 000 in women between the ages of 64 and 69 in 1999 [9].

Previously, Pap smears were done on an ad hoc basis, offered on request by women in their reproductive stage, who came for Family Planning. Women who had access to Private Health care had Pap smears on demand, whereas women using the Public Health sector were not informed of the availability of the service [9].

2.2. Contributing Factors

2.2.1. Agent Factors:

Infection with the Human Papilloma Virus (HPV) has been identified as a precursor for most of the cervical cancer cases. HPV is a necessary, but not

* The term “Black” in the above reference was used by the authors to refer to the demographically defined South Africans of African descent.

sufficient cause for cervical cancer [14]. Virtually, 99.7% of cervical cancer cases are linked to genital infection with HPV [12] [15]. There are about 40 types of HPV that can infect the human genital tract. They are classified into high risk and low risk types, with high-risk types leading to cervical cancer, when low risk types lead to genital warts. The most common high-risk types are HPV 16 and HPV 18. [9, 16] Fifteen HPV types have been classified as high risk and 12 as low risk [17]. Other types that have been known to cause cervical cancer are types 31, 33, 39, 45, 52, 58 and 35 [12]. More than 70% of cervical malignancy can be attributed to HPV 16 or 18, including type 45 in Africans [9]. HPV is the most common Sexually Transmitted Infection (STI) worldwide, affecting an estimated 50 – 80% of sexually active women at least once in their lifetime [5]. They are mostly affected during their teens to early thirties. Infection with HPV can be found in different stages of cervical lesions, from normal cervical cells to invasive carcinoma. HPV infection is measured by using HPV DNA detection in cervical cells. The relative frequency of the organism in the cervical cell increases with the severity of the cervical lesion [11].

2.2.2. Host Factors:

Age: Women in their 60's are more prone to developing cervical cancer than young women, i.e. age is a risk factor for cervical cancer. The peak age for incidence of cervical cancer is 55 – 64yrs [11].

Oral Contraceptives – use of oral contraceptives for more than 5 years has been associated with a modest 1.3 – 1.8 fold increase in risk of cervical cancer [18].

HIV – Cervical cancer seems to be an opportunistic infection among those living with HIV as it is linked with a poor immune system [18]. A study done by Moodley and Mould showed that HIV-infected women in the African setting present with carcinoma of cervix at a younger age, and show a more rapid decline in health and earlier demise [13]. A study done in Johannesburg in 2000 showed that HIV positive women presented with cervical abnormalities 10 years earlier than HIV negative ones [19].

Other factors that influence progression to invasive cancer are multi-parity and cigarette smoking [20]. The prevalence of smoking among South African female adults is 7.7% [11].

Early commencements of sexual intercourse, high number of sexual partners and other sexually transmitted diseases have been identified as contributing factors.

2.2.3. Socio-Economic and Environmental Factors:

The low level of education and socio-economic conditions are contributing factors to the high morbidity and mortality for cervical cancer [21]. A British study shows that adult learning that leads to qualifications increase the probability of uptake of cervical cancer screening [22]. In Sweden, evidence indicates that in the early 1920's, population based public and professional education programs, together with improved facilities for treatment, reduced the frequency of advanced disease, even before the introduction of cytology [23]. Women who are less likely to be reached by the information on cervical cancer are older, poorer, less educated and unemployed [24]. Lack of knowledge and awareness about cervical cancer and screening programs contribute to the high incidence of cervical cancer in most developing countries. In Bangladesh, a qualitative study that was done among women and men indicated a high level of knowledge, but very low levels of practice of cervical cancer screening [8]. In these communities, men are the main decision makers, even about their wives' health. Women did not have a problem with having a Pap smear, but preferred the procedure to be done by a female health provider, with adequate privacy.

Access to healthcare services is another contributing factor to low screening in developing countries. Healthcare services, particularly in the rural areas in South Africa, are inadequately developed, and those that exist tend to focus more on curative than preventative health care [25]. The high mortality and morbidity from cervical cancers in developing countries is in part a reflection of the impact of inequity of access to healthcare [23]. There may also be financial barriers to access healthcare services, where people are unemployed, and have

to use other means of transport to reach the health facility, or having to pay for the service.

The extent of the interaction between the health provider and patients is of utmost importance. The health provider is expected to offer or recommend Pap smear to the women [26] [27]. A study done among female nurses in Nnewi, Nigeria, indicated that although 87% of the respondents (nurses) were aware of the existence of screening service, only 5.7% of them had ever done a Pap smear, and 37.1% had no reason for not doing it [28].

Failure of both the healthcare system and patients to act on abnormal test results can also contribute to failure of detection [29].

2.3. Cervical Cancer Screening:

In most developed countries, success in the reduction of cervical cancer prevalence has been attained through screening tests using Pap smear. The Pap smear was introduced in 1941, and has greatly reduced the number of cervical cancer related deaths [30]. It has lowered the world wide mortality due to cervical cancer by 2% annually. To date, the most powerful tool for the prevention of cervical cancer has been the implementation of national, organized mass cytology-based screening programs [20][31]. This type of implementation is possible in countries with well established infrastructure and personal identification numbers. They implement personal invitation, linked to a cancer registry. Data have shown that cervical cancer mortality can be reduced by about 60% in well organized cytology screening programs. In the UK, a screening program was introduced in 1964 but was ineffective. A systematic call-recall system was introduced in 1988 and a National Health Service cervical screening program with a coordinating network was set up and implemented in 1989 [23]. In Italy, a public screening program was implemented in almost all parts of the country, but coverage was low in some regions. A survey done indicated that most respondents say that they did not receive reminders [32]. This shows that the success of the program is enhanced by sending reminders of the next Pap smear appointment to the women.

In most developing countries, such programs are not in place. Some of the barriers contributing to the lack of success in developing countries are:

-Lack of awareness among stakeholders

-Lack of cervical cancer control programs

-Absence of country-tailored guidelines for best practices of cervical cancer control. [5]

-Poor infrastructure

The technical and financial constraints of implementing cytology-based screening programs in developing countries have led to the investigation of screening tests based on visual examination of the uterine cervix [33]. Visual inspection with acetic acid (VIA) coupled with cryotherapy was introduced in 2000, as a complement to Pap smear. The strategy was introduced where there are serious geographic, economic and socio-cultural barriers to healthcare services. VIA is an alternative especially where access to healthcare is a limitation [34]. This involves naked eye visualization of the cervix after applying acetic acid, to detect presence of HPV [35]. The procedure is then followed by cryotherapy if the test is positive. Although the acetic acid screening test has a lower specificity than cytology, it nevertheless has a slightly higher sensitivity and the additional advantage is that the detection and treatment is done in one setting, and the patient cannot be lost to follow up as in the case with Pap smear. The test has shown to be more sensitive than cytology, but less specific [36, 37]. Although the VIA procedure is quick, easy to do, requires a low level of training and no special equipment [38], the associated cryotherapy equipment is expensive and requires specialized training for its use.

2.4. Intervention Strategies:

A cervical cancer prevention and control program consists of three service delivery components that must be linked together: -

Community information and education

Screening services

The diagnostic or treating services (planning and managing programs)

Management of cervical cancer is by: -

Primary Prevention:

-Health promotion: - Messages to promote abstinence, mutual monogamy and the use of condoms should be improved [20]. Women should be advised against smoking [39]. Effective health education messages are necessary to increase uptake of cervical cancer screening among women. The mass media has been used in different settings, and proved that the promotion of cervical cancer screening through the media increases the uptake, even though it is on a short-term basis. Different types of media have been used, like radio, TV, and print media. [40, 41, 42]

Secondary Prevention:

-Screening: - Cervical cancer screening and treatment is justified, based on the general principles of public health screening, namely: -

It is an important health problem since it has a high morbidity and mortality.

It has a detectable pre-clinical phase.

The natural history is known.

There is a recognized treatment for lesions identified following screening.

The screening test used is acceptable and safe. [43]

There must be a defined target population, means to identify, invite, screen and follow up women in that population. In implementing the program for cervical cancer screening, certain infrastructure requirements need to be met: -

Facility should have a private examination area

An examination bed should be available

There should be trained health professionals

Sterile vaginal speculum should be available

Supplies and equipment for preparing and interpreting Pap smears should be available, like slides, light, fixing spray, wooden spatula or brush

Cytology requisition forms

Record books to keep register and DHIS tally sheets for data collection

Cytology laboratories with trained personnel

Pathologists

Transportation of specimen to laboratory and returning results

Information systems to ensure follow up contact with patients

Quality assurance systems to maximize accuracy

Tertiary Prevention:

-Surgical Intervention:

-Palliative care:

Healthcare personnel should be adequately trained to be able to interpret results and know what steps to follow. Referral systems should be in place for abnormal smears. CIN I or low-grade SIL and CIN II and ASCUS should have smear repeated after 12 months. If the diagnosis remain the same or worsens, they should be referred for colposcopy. If negative on the second smear, it should again be repeated after 12 months [(39)]. CIN III or AGUS should be referred immediately for colposcopy. If positive, may be treated with cryo-therapy or LLETZ (Large loop excision of the transformation zone) method.

The Pap smear has a sensitivity of 51% (average), which is the ability of a test to detect all those with the disease in the screened population. It has a specificity of 98% (average), which is the ability of a test to identify correctly those free of disease. [(43)]

The relatively low sensitivity implies that some clients may have lesions, but be missed by the test; thus the reason for repeated smears. The developed countries can afford to have more frequent smears and may thus pick up all those positive smears that may have been missed on previous occasions. The sensitivity of the Pap smear test differs between the developing and developed worlds, being much lower for the low resourced countries, as low as 29.5% for India, and as high as 70% in developed countries [(24)].

The policy on cervical cancer screening in South Africa is implemented by the National Department of Health, for implementation by the provinces. All Primary Healthcare facilities in South Africa should be able to do cervical cancer screening, by meeting all the infrastructure requirements. According to Cronje H S, in the Free State, South Africa has at least 35 cytological laboratories, private and public sector, and adequate treatment centers for referral [(24)].

Trends noted in the current program for cervical cancer screening for South African provinces [(20)]:

Table 1: Overview of current and projected cervical screening activity in different provinces in South Africa.

Variable	EC	GP	KZN	LP	MP	NC	WC	Total
No. of women to achieve 70% coverage	879 449	1 153 320	1 095 456	730 973	319 000	205 391	627 523	5 001 113
Target 2006/7	25 127	140 046	110 354	52 212	31 900	20 539	58 270	438 448
%	2. 0	8. 5	10	5. 0	7. 0	7. 0	6. 5	
Cases screened 2005/Jan 2006		49 503	28 760					Screened 78 263
Cases screened 2004/5	18 485			17 404	5 957	5 918	58 463	Screened 47 764
Total								182 490
Max distance to travel for colposcopy (kms)	130– 840		100 – 300	350	130	400		

* Data was not available for Free State and North West.

Source: Dr. Pulane Tlebere National Department of Health 2006. (Extract from Health Systems Trust) [(20)].

The above table shows that the number of women screened in 2005/6 was far below the set target. When we consider Gauteng, the number of smears done over the 9 months from April 2005 to January 2006, is 49 503, which is far short of the target of 140 046 for the year 2006/7. The above table also shows

the challenge faced by all other provinces (except Gauteng and Western Cape) of the long distances that has to be covered to reach a health facility.

2.5. Problem Statement:

The cervical cancer screening policy was introduced in 2001, with the intention of screening at least 70% of the target population of women aged 30 – 59 years, over a period of 10 years. In order to achieve this, the clinic should aim at screening at least 7% percent of the target population annually [(44)]. An analysis of the routine health information system at the Tshwane Regional offices of the Gauteng Provincial Health Department revealed that women of that target group are not being adequately screened. A study done in 1996 found that only 2% of the patients seen at Mamelodi district hospital had knowledge of cervical cancer, and the prevalence of abnormal cervical cytological findings (low and high-grade squamous CIN) was 54/1000. The National target for coverage of cervical cancer screening has been revised, and the new targets set as follows[(45)]:

Table 2: Targets for cervical cancer coverage, Department of Health South Africa

Indicator	Target 2007/8	Target 2008/9	Target 2009/10
Cervical cancer screening coverage	20%	25%	30%

Data source: Strategic Plan 2007 / 08 – 2009 / 10. Department of Health, Republic of South Africa.

Evidence indicate that there is under-utilization of the cervical cancer screening services at the primary care level among women aged 30-59 years in the Tshwane area. The extent of and the underlying factors for the cervical cancer screening uptake are not known.

2.6. Motivation for study:

The World Health Organization estimated that mortality rate form cervical cancer among women aged between 35-64 years can be reduced by 64% in women who undergo three cervical cancer screening tests every in that period at intervals of 10 years [(46)]. Numerous other studies have also shown that cervical cancer screening coupled with the associated surgical intervention are effective in reducing mortality from cervical cancer, yet the uptake of the service remains low. The factors responsible for the low uptake of free cervical cancer screening tests among public sector primary health care users are not clearly understood. This study seeks to gain understanding of these factors and to propose the interventions that are appropriate for the Mamelodi Provincial clinics.

2.7. Research Question:

What has been the extent of cervical cancer screening in Mamelodi Provincial clinics in the period August 2003 to July 2000 and what factors are associated with the low uptake of the service?

2.8. Significance of Study:

The study is intended to evaluate the implementation of the Cervical Cancer Screening Policy in the 2 facilities as well as identify the impediments to the uptake of cervical cancer screening services in these facilities. There is every reason to believe that enough information is being conveyed to the services users in the primary health care facilities on the benefits and availability of cervical cancer screening to prevent the death of women from cervical cancer. The study will inform program managers on the interventions necessary to enhance the utilization of the cervical cancer screening services in these facilities.

CHAPTER 3

3. Methods

3.1. Aim of Study:

To determine the extent of cervical cancer screening (Pap smear) in the Primary Healthcare facilities in line with the Cervical Cancer Screening Policy of the National Department of Health and to assess facility, provider and user-related factors that influenced the utilization of the cervical cancer screening service.

3.2. Objectives of Study

3.2.1. To determine the percentage of women aged 30 – 59 years who had cervical Pap smear screening when attending the Primary Healthcare facilities in the period August 2003 – July 2007 in two Provincial clinics in Mamelodi East.

3.2.2. To determine the knowledge, attitude towards, and practice of cervical cancer screening among women clinic users of the target group.

3.2.3. To determine the Service Providers' perception and knowledge of the cervical cancer screening program.

3.2.4. To describe the health system's determinants of uptake of cervical Pap smears in the public healthcare facilities in the specified clinics.

3.3. Study Design:

This is a health systems program descriptive study.

3.4. Study population:

The population of this study is divided into two types: -

- Women aged 30 – 59 years who use the primary healthcare facilities concerned.
- Health care service providers at the two (2) selected facilities (i.e. doctors and nurses).

3.5. Setting:

Mamelodi is a township East of Pretoria, situated about 20 km east of the centre of the City of Tshwane (Pretoria). The total area is approximately 25 square kilometers and the unofficial population of Mamelodi is now close to one million [47].

Figure 1 Map of City of Tshwane (Pretoria) showing Mamelodi towards the East.

The Moretele River divides Mamelodi into an eastern and western part. Most residents live in Mamelodi East in informal settlements such as Lusaka in Mamelodi East.

The township is growing more towards the East, resulting in the East serving a relatively younger population as compared to the West. Mamelodi is one of the

most densely populated areas, and also the poorest areas in Tshwane, it is estimated that only 45% of Mamelodi residents are economically active [48]. There are about eight clinics in the area, with one Community Health Center (CHC). The clinics are administered by two tiers of government, namely the Provincial Health and Local Authority. Two of the clinics are administered by the Provincial Health, while six are administered by Local Authority. Patients are encouraged to consult at the clinic nearest to their homes, thus each clinic is expected to have its own target population. This will however overlap, and people may decide to visit a clinic of their choice for certain reasons. The clinics used in the study are the two Provincial Health clinics, Stanza Bopape Community Health Centre and Holani Clinic, which are both in Mamelodi East. The Local Authority clinic could not be used because their daily records do not reflect the ages or date of births of patients. Patients are classified as either under five years or five years and above. Thus it would make it difficult to select the women of the target group, namely 30 – 59 years from the records.

Stanza Bopape is a Community Health Center, providing services 24 hours a day and seven days a week. After hour services are mainly for maternity and emergency patients. Most of the personnel start working at 07h00 and leave the clinic at 16h00. Thereafter the maternity nurses and two professional nurses and a doctor remain on duty for after hour services. The CHC caters for all types of primary healthcare services, like family planning, chronic illness management, ante-natal care, well baby service, minor ailments, HIV/ AIDS, ARV's, mental health, maternity and emergency care. The populations living near the facility are from both informal settlement and formal housing.

Holani clinic was opened in December 2003. It is situated in the formal sector of the township, and services a population that has a large number of poor and unemployed families. It is open from Monday to Friday, 7h00 to 19h00. Most nurses leave at 16h00, and one professional nurse and an assistant nurse remain until 19h00. On Saturday the clinic is open from 7h00 until 13h00. The following services are provided: the following services; ante-natal care, chronic

illnesses care, family planning, well baby clinic & HIV/AIDS. The clinic does not provide maternity and ARV's services. The clinic is within walking distance for most residents in the area.

3.6. Selection of Study Sites and Study Subjects:

This study consisted of four components which are illustrated in figure 2 below. Purposeful selection of two healthcare facilities out of a total of eight Primary Healthcare facilities in the defined area was done in order to ensure inclusion of the Provincial primary healthcare facilities that were considered to have both the capacity to conduct cervical cancer screening tests and the appropriate daily record keeping which reflect the patients' sex and age.

Figure 2 Sites and Subjects Selection.

3.6.1. Census of records.

All files belonging to females aged 30 to 59 who were previous and current service users were reviewed. The variable of interest was evidence that Pap smear was done. Year of Pap smear procedure was also recorded. Date of birth was recorded but not analyzed.

3.6.2. Clinic Users.

The total number of women aged 30 – 59 who attend acute and chronic healthcare, family planning and wellness clinic at Stanza Bopape CHC was calculated from the clinic records to be an average of 750 per week. The number of women aged 30 – 59 years who attend clinic at Holani clinic was similarly calculated to be an average of 210 per week. The sample size was based on the observed total population of women of the target age group in the facilities under study. This is available from the DHIS for all the clinics in Tshwane, based on the mid-year estimates for 2006. It is assumed that the services of the public sector primary healthcare facilities are used solely by the uninsured patients. Based on this assumption and the location of the primary healthcare facilities, it is estimated that the number of women aged 30 to 59 years serviced by Stanza Bopape CHC is 12098 per week, and Holani clinic services 3389 per week.

3.6.2.1. Sampling.

The estimated population size of women aged 30 – 59 years who are expected to use these two facilities is 15487. At each of the two sites of study, eligible women were selected for the study using systematic sampling. Estimated sample size was 95. One hundred (100) women were selected for inclusion in the study. The sample size for the study was calculated with the use of the

statistical package nQuery Advisor version 4.0 based on the following assumptions:

- The total number of eligible women at the site of the study is equal to 15 487, based on midyear population estimates obtained from the 2006 DHIS.
- The level of significance of study is fixed at the 5% level.
- The proportion of women aged 30 – 59years who are aware of the Pap smear test at the sites of study ranges between 55% and 63%.
- Two sided test of hypothesis
- Test on single proportion

To get the sample size for the two facilities, probability proportional to size was applied, at an estimated ratio of 3.5: 1 for Stanza Bopape CHC: Holani clinic. This was based on the population size of women in the specified age group, as determined by the DHIS population estimates for the particular clinics. The target populations of women aged 30 – 59 years for the drainage area of each clinic in 2005/6, according to the DHIS, is as follows:

Table 3: **Sample size for interviews.**

Healthcare facility	Uninsured population of the 30 – 59 years females	Sample size
Stanza Bopape CHC	12 098	$N1$=74
Holani clinic	3 389	$N2$=21
		N=95

For systematic sampling, the clinic's daily register was used as a sampling frame, independently for each clinic. The sampling frame was compiled from subjects selected from the clinics' daily patient registers on the basis of their sex and age. Weekly attendance of patients of the target group was estimated at 750 for Stanza Bopape clinic and 210 for Holani clinic. Based on the sample

size and the weekly attendance of patients for the individual clinics, calculations for systematic sampling were done as follows: the number of weekly attendance by the women of the target group was divided by the sample size for the particular clinic as follows:

Stanza Bopape: 750/ 74 = 10

Holani: 210/21 = 10

This implies that at both facilities, every 10th woman of the target group who presented at the corresponding health care facility was selected as a subject.

3.6.3. Selection of Service Providers.

The numbers of Professional Healthcare Providers in both facilities were established by asking the Health Facility Managers. Holani had a staff establishment of one full time Doctor and nine Professional Nurses. Three of the nurses were on leave at the time of data collection, so they were not included in the study. Stanza Bopape had a staff establishment of one part-time Doctor, six full-time Doctors and 32 Professional Nurses. The nurses who work at night were not included in the study.

3.6.4. Selection of Facility Managers.

Holani clinic has one Facility Manager, who was interviewed to determine the readiness of the facility to render the Pap smear service. Stanza Bopape had a Facility Manager and a Deputy Manager. The Facility Manager was not present at the time of data collection. The Deputy Manager was available for the interview.

3.7. Definition of Variables.

Knowledge: Women who had heard of the Pap smear test, and knew that it is meant to detect cervical cancer.

Practice: Women who underwent a Pap smear.

Attitude: The belief and feelings towards undergoing a Pap smear. A negative attitude was determined by selecting those women who know how a Pap smear is done, and from those, determining if they have some difficulty doing it.

Age category: Age was categorized into three groups, namely 30 – 39, 40 – 49 and 50 – 59.

Employment: Considered to be those who were on either formal or informal employment, or self employed.

Level of education: Was divided into four categories, namely: no schooling, primary – schooled up to grade seven; secondary – schooled up to grade 12, and tertiary – meant post matric. For analysis purposes, three categories were used. No education and primary education were classified together.

Parity: For analysis purpose, this was divided into two categories. First category (low parity) included women who had no children, one child and two children. Second category (high parity) was women who had three or more children.

Marital status: divided into three categories. First – single women. Second – widowed and divorced women. Third – married and those who stay together with their partners.

3.8. Data Collection

3.8.1. Record Review:

Holani: The files at this facility are arranged according to dates of birth. It was therefore practical to select files of subjects whose birth years ranged from 1945 to 1977. All files belonging to females in this range were selected. Each file was checked for record of Pap smear results, Pap smear done or history of previous Pap smear. Tally sheets were used to enter the name of patients who attended the clinic, and the years of attendance. The names were then allocated a unique identifying number when entered into the excel spread sheet. We noted the date of birth, whether a Pap smear was done and on which year. Those who had more than one Pap Smears were entered only once. Those with Pap smears done before or after the specified dates were excluded, since they

did not qualify for Pap smear during the period of study. Those who had a record of Pap smear having been done in the previous 10 years were not captured since they were not, according to the policy, eligible for the next Pap smear.

Stanza Bopape: Tally sheets were used to enter the patient names, file number age and date of Pap smear, sequence used was months. The information was found to be incomplete. Daily records of patients with age and file number for the target age group and gender were also entered in a tally sheet. For the purpose of this objective, service user data could not be analyzed.

3.8.2. **Data collection from Service Users:**

For data collection from the service users, questionnaires were translated into 3 languages, namely Sepedi, Zulu and Xitsonga with the help of Thembi Kemisho at Translation World in Rand Park Ridge (Annexure 5). Systematic sampling of women of the target group was done from the daily attendance register. Participating clients were given the information leaflet to read by themselves if they could read; otherwise the researcher read the information out for each of them (Annexure 6). Clients were given questionnaires according to the language of their choice. They were allowed to leave their place in the queue to complete the questionnaires, in private, and then get back to their place in the queue. Variables studies were age, marital status, level of education, parity, occupation, frequency of clinic visits, mode of transport to clinic, history of Pap smear and knowledge of Pap smear,

3.8.3. **Data collection from Service Providers.**

Self-administered questionnaires were distributed to the Service Providers, both doctors and professional nurses. Stanza Bopape had a staff establishment of 32 nurses, with about 16 working in the maternity section. Some of them were off duty during the time of data collection. Twenty four questionnaires were handed out to all the doctors and 17 nurses. The questionnaires were left with

the Service Providers, to be collected after a week or two. At Holani, five questionnaires were distributed to four nurses and one doctor. The variables of interest were: whether they did Pap smears on their patient, whether they have privacy for that, whether they talk to and invite their patients to do Pap smear, knowledge of the Pap smear policy and knowledge of the tally sheets and Pap smear records.

Data collection from Facility Managers

Interviews were conducted with each of the two Facility Managers. The administration of the structured questionnaires and verification of the available resources was done by the researcher. For example, when asking about lamps, we counted how many rooms actually had the lamps. When enquiring about posters, we walked around the facilities to look for posters. Variables of interest were: number of staff doing Pap smear, privacy of consulting rooms for Pap smear, adequacy of equipment, turn around time for tests and availability of information material.

3.9. Data Analysis:

All data collected from the clinic users were processed using EpiInfo and Microsoft Excel (Microsoft Corp., Redmond, Washington). Data were then transported to STATA for Analysis. (Version 9; StataCorp, College Station, Texas, USA). Frequencies and percentages were calculated and cross-tabulations also used. Differences between the groups were examined using either the Fisher exact test or the Chi-square test. The groups were established based on the following definitions:

3.10. Ethical Considerations:

3.10.1. Consent:

Information leaflet were translated into the three local languages (Sepedi, Zulu and Xitsonga) that are considered to be common in the community. These were made available in addition to the English language client information leaflet. The information leaflets and consent forms for service providers and facility managers were written only in English. Each participant was allowed to read and complete the questionnaire in a language with which she was comfortable. Two consent forms were signed, one for the researcher to keep, and the other one was given to the interviewee. Both the interviewer and the client signed the copy of the consent form which was given back to the participant.

3.10.2. Confidentiality:

Participants were advised not to write names on the questionnaire. The questionnaires were completely anonymous. The informed consent (Annexure 6) was separated from the questionnaire, so that no person could be linked to any questionnaire. Service providers were allowed to take the questionnaires and complete them at their own time.

3.10.3. Approval:

Ethical clearance was obtained from the Ethics Committee of the University of Pretoria. (Annexure 1). Approval was obtained from the Academic Accreditation Committee of The School of Health Systems and Public Health at the University of Pretoria. (Annexure 3)

3.10.4. Authorization.

Authorization for data collection was obtained from The Senior Medical Advisor at the Regional Department of Health, (Annexure 2), together with the Facility Managers for the two clinics.

CHAPTER 4

4. Results of the Study

This chapter presents the results of the study. For convenience the presentation of the study results has been arranged to be in line with the stated objectives set out in the study

4.1. Service Users' Record Review:

Holani Clinic: Of the 4199 women aged 30 – 59 years who attended the Holani Primary Healthcare facility between January 2004 and July 2007, less than 10 percent of them had at least one cervical Pap smear done. Four thousand one hundred and ninety nine (4199) records were reviewed (no sampling). Of these, 335 (8%) had Pap smear done, and about 3864 (92%) did not do Pap smear

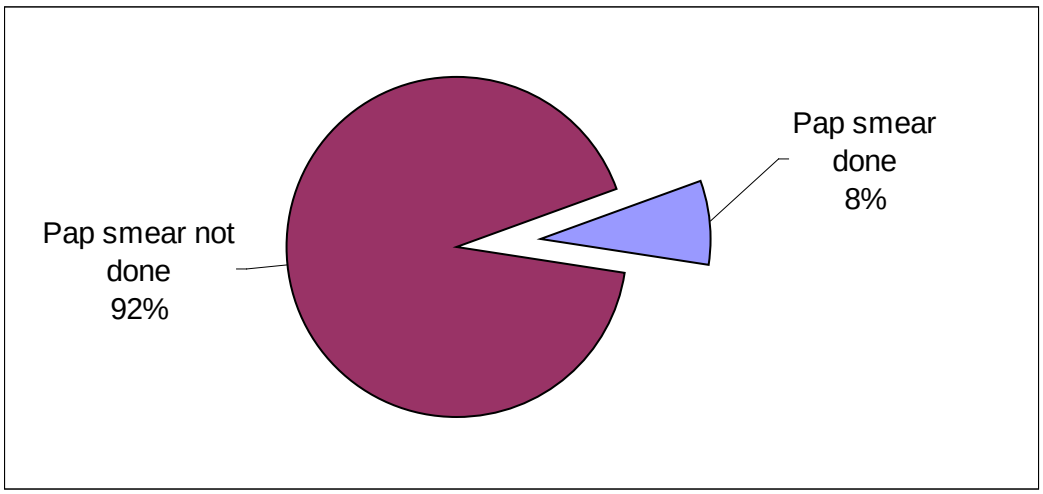

Figure 3: Distribution of Pap smear at Holani clinic from Jan 2004-Jul 2007, n=4199

The proportion of women who had Pap Smear at Holani clinic:

Fig 3 shows the distribution of women aged 30-59 years who attended Holani clinic from Jan 2004 to July 2007. During this period, a total of 4199 women, aged 30 – 59 years, presented themselves at the clinic for various ailments.

Some attended once, and some several times, e.g. monthly attendance for a variety of conditions which include family planning, acute and chronic illnesses. The figure, 4199 refers to the number of clinic files belonging to individual persons, and not the number of clinic attendance.

Stanza Bopape Community Health Center: Data collection for record review could not be done at this facility due to the inadequacy of record keeping. (Annexure 6). Although data collection was not possible, some of the findings revealed by the scanty data are that, an average of 78 Pap smears were done on a monthly basis. This was calculated on the complete data for the following months: August 2006 = 86; September 2006 = 72; and February 2007 = 75.

4.2. Service Users' Interviews.

A hundred (100) women were approached, but 4 declined and 96 agreed to participate, giving a response rate of 96% for the two clinics combined.

Demographics:

The demographic pattern of the participants is reflected in the following graphs.

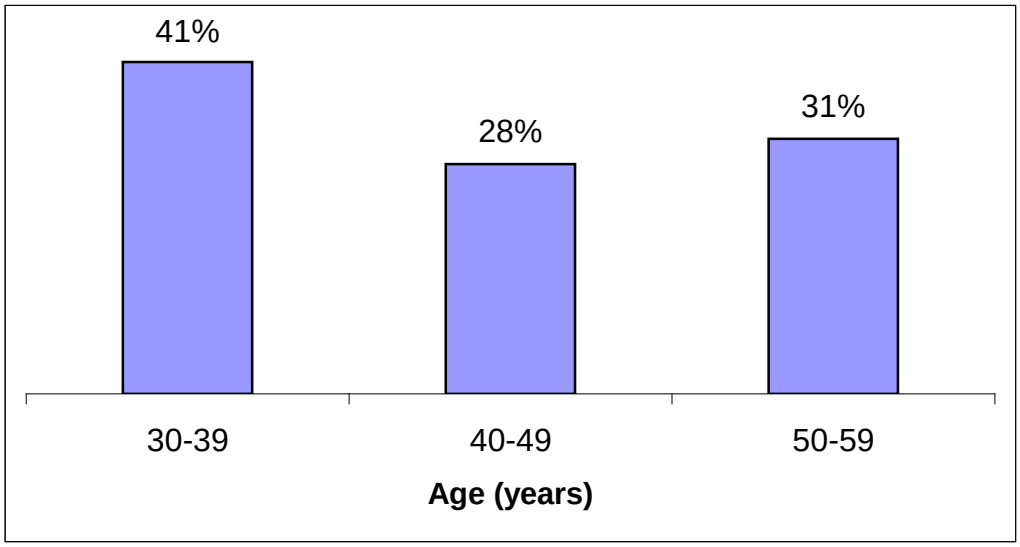

Figure 4: **Age distribution of women (n = 96)**

The majority of women (41%) who were interviewed were in the age group 30 – 39 years. Those in the age group 40 – 49 comprised 28% and 31% were in the age group 50 - 59 years.

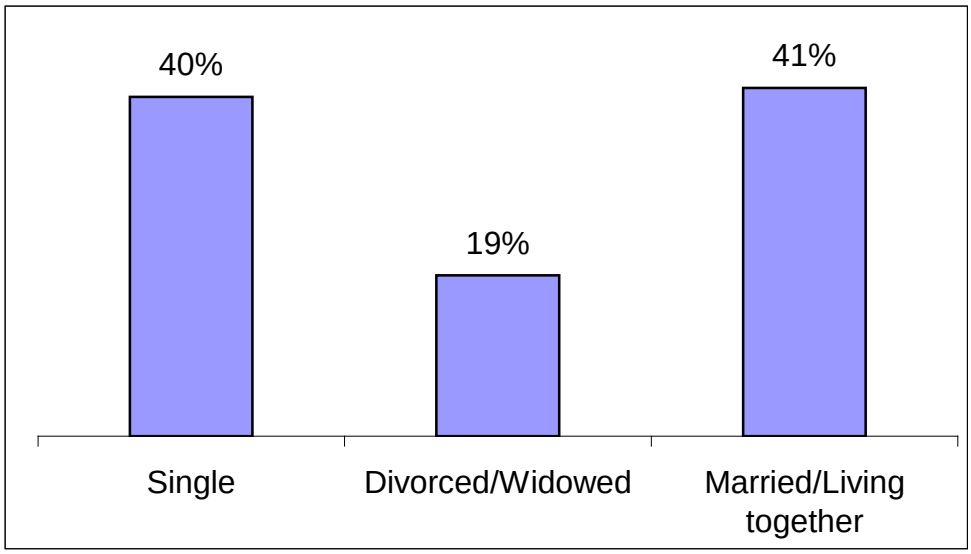

Figure 5: Marital Status distribution of women (n=96)

Forty percent of them were single, and 41% were either married or living with a partner. Nineteen percent were either divorced or widowed.

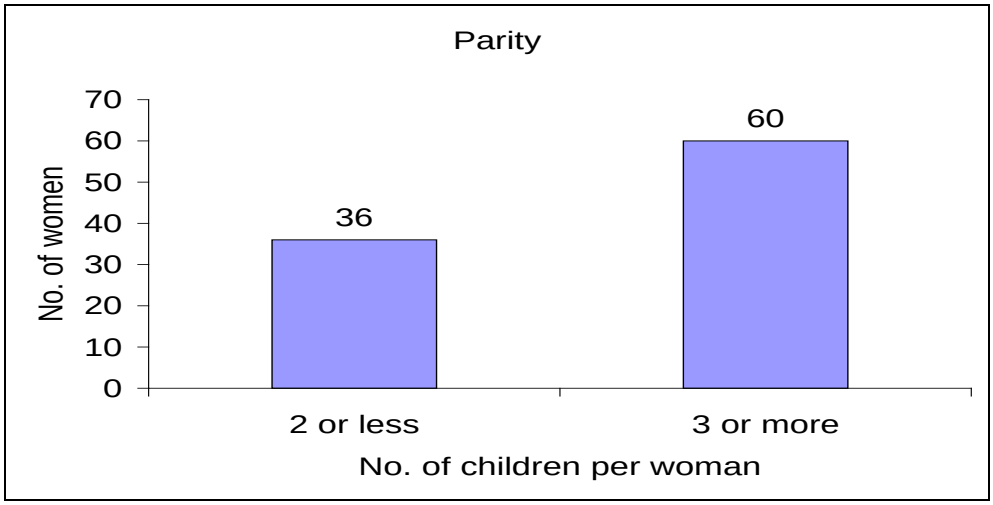

Figure 6: Parity of women (n=96).

Thirty six women (38%) had two or less children, while 59 (62%) had 3 or more children.

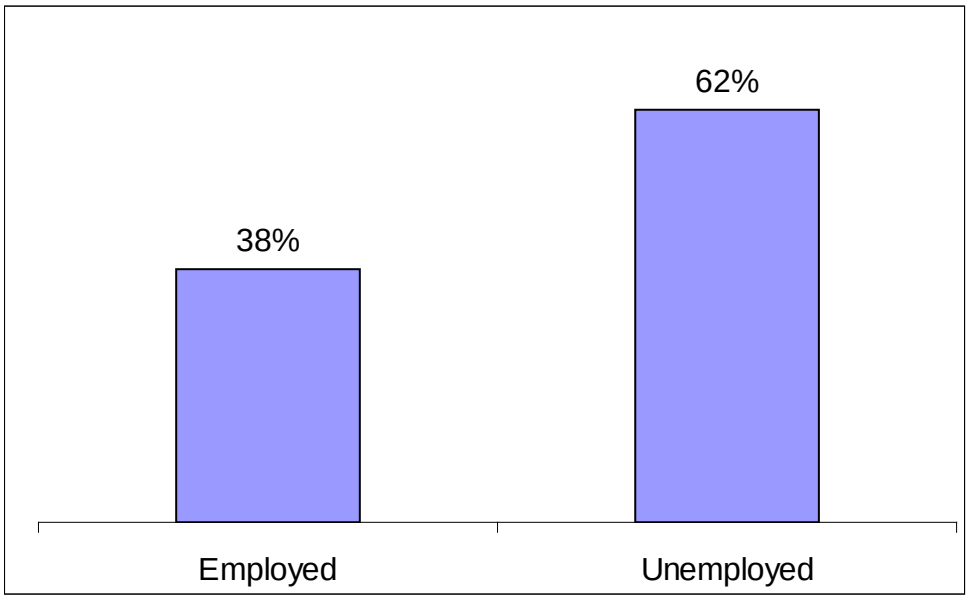

Figure 7: **Employment status of women interviewed (n = 96)**

Thirty eight percent of the women were employed. Most of them (62%) were unemployed.

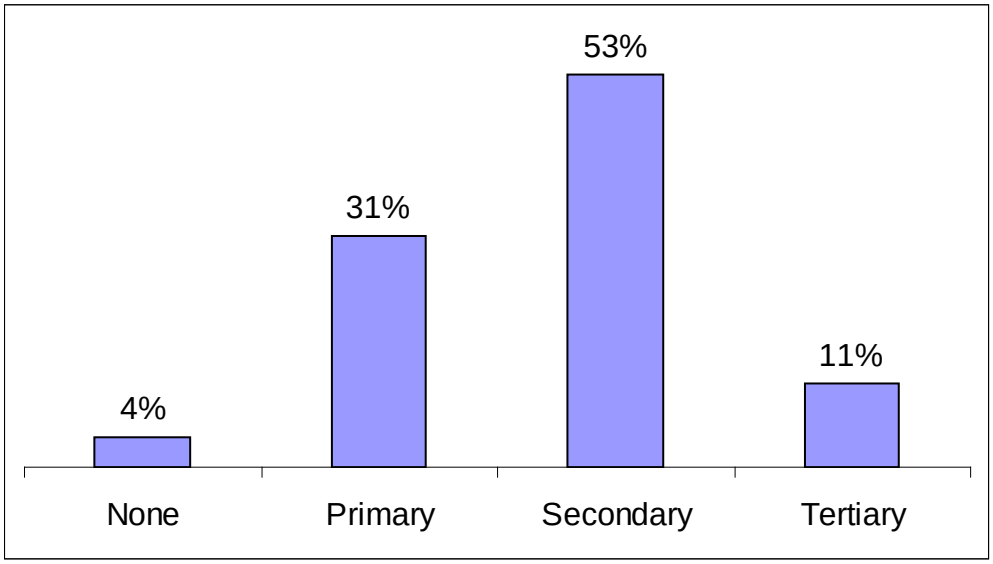

Figure 8: **Educational Status of women interviewed (n = 96)**

The majority of them had secondary education (53%), 31% had primary education, 11% had tertiary education, while only 4% had no formal education.

Table 4. Time taken to reach clinic and mode of transport

	Time taken to reach clinic								
	Less than 30 minutes			**30 – 60 minutes**			More than 60 minutes		
Mode of transport	No	%	95%CI	No	%	95%CI	No	%	**95%CI**
On foot	35	54.7%	41-67	17	65.4%	44-83	3	50%	**12-88**
Taxi	29	45.3%	33-58	7	26.9%	11-47	2	33.3%	**4-77**
Own car	0	0	0-5.6	1	3.8%	0.1-19	0	0	**0-46**
Other	0	0	0-5.6	1	3.8%	0.1-19	1	16.7%	**0-64**
Total	**64**	**66.7%**		**26**	**27%**		**6**	**6.2%**	

The above table serves to assess the time that it takes for the women to reach the health facility. The majority (35 + 17 + 3 = 55) or 57% reach the health facility on foot, while (29 + 7 + 2 = 38) or 39.6% use a taxi. Sixty six percent (66%) of them reach the health facility within 30 minutes, while 27% reach it within 30 – 60 minutes. Only 6% of the respondents indicated that they take more than an hour to reach the health facility.

Table 5: Knowledge and source of information about Pap smear

	Frequency .	**Percent**	**95% CI**
Heard about Pap smear			
Yes	85	89	80.4 - 94.1
No	11	11	5.9 - 19.6
Knowledgeable about Pap smear			
Yes	36	38	27.8 - 48.0
No	60	62	52.0 - 72.2
Source of knowledge			
Family/Friends	8	8	3.7 - 15.8
General Practitioner	4	4	1.1 - 10.3
Health institution	62	65	54.2 - 74.1
Never heard about Pap test	11	12	5.9 - 19.6
Media	6	6	2.3 - 13.1
Work	5	5	1.7 - 11.7

The above table indicates the number of respondents who reported that they knew about Pap smear, and from where they got their information. Eighty nine percent (89%) of the respondents indicated that they had heard about Pap

smear. Sixty nine percent (69%) of them had heard about Pap smear from a health facility or a health practitioner. Eleven_percent (11%) got information either through the media or at work. Twelve percent (12%) of them indicated that they had never heard about Pap smear. To determine whether they do actually know about it, they were asked what was the purpose of a Pap smear, and only 38% knew the purpose of Pap smears. Knowledge was therefore classified as those who had heard about Pap smear and actually knew what its purpose was.

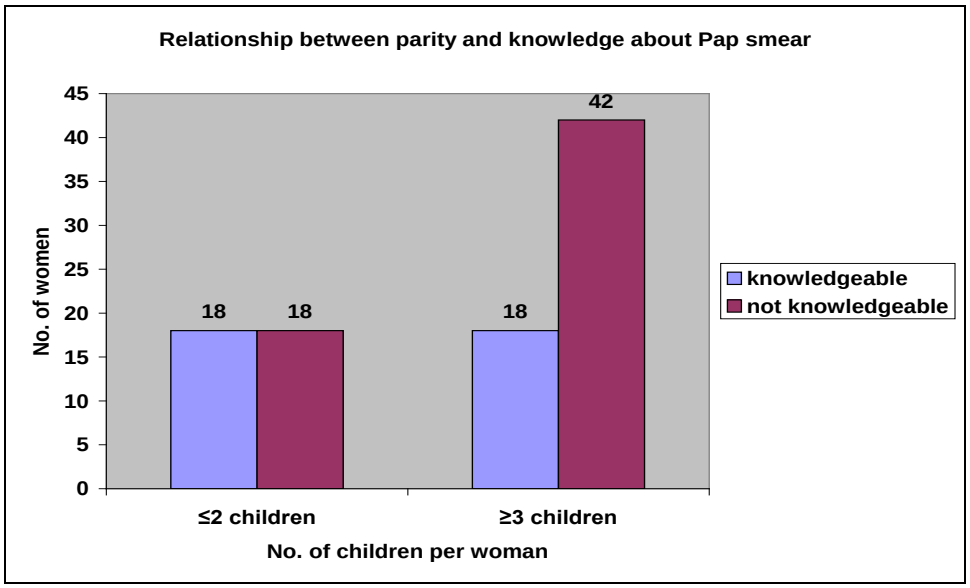

Figure 9: Relationship between knowledge of Pap smear and parity (n=96).

The relationship between parity and knowledge of Pap smear is shown in figure 11 above. In the women with two or less children, the number of those who are knowledgeable about Pap smear is the same as those who do not know. In those with a higher parity (three or more children), those who know about Pap smear are less (18) than those who do not know (42).

Practice of Pap smear screening according to age.

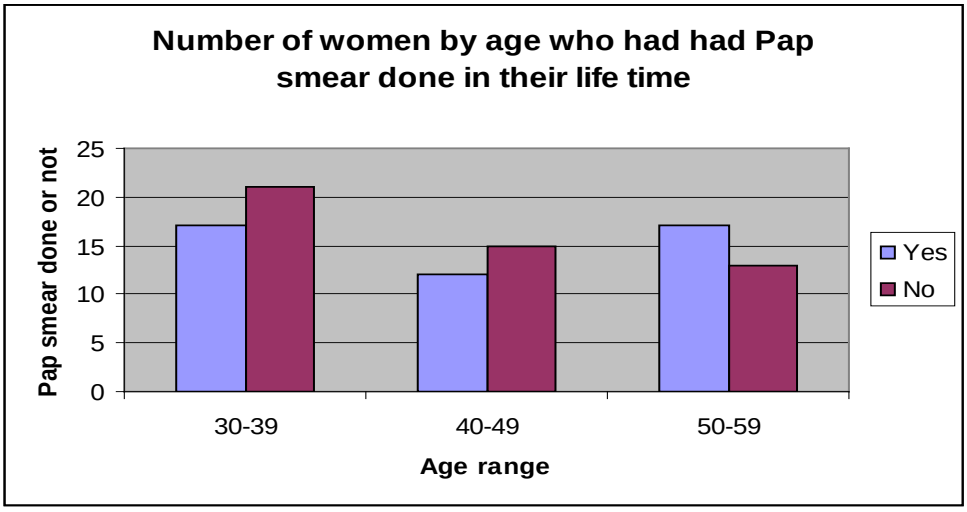

Figure 10: Number of women by age group who had had Pap smear done in their life time. (n = 96)

The above figure shows that, in the age group 30 – 49 years, there were 21 women who had never had Pap smear done, as compared to 17 who had ever had it done. In the age group 40 – 49 years, there were 15 women who had never had Pap smear done, as compared to 12 who had ever done it. In the age group 50 – 59 years, 17 women had ever done Pap smear compared to 13 who were not screened.

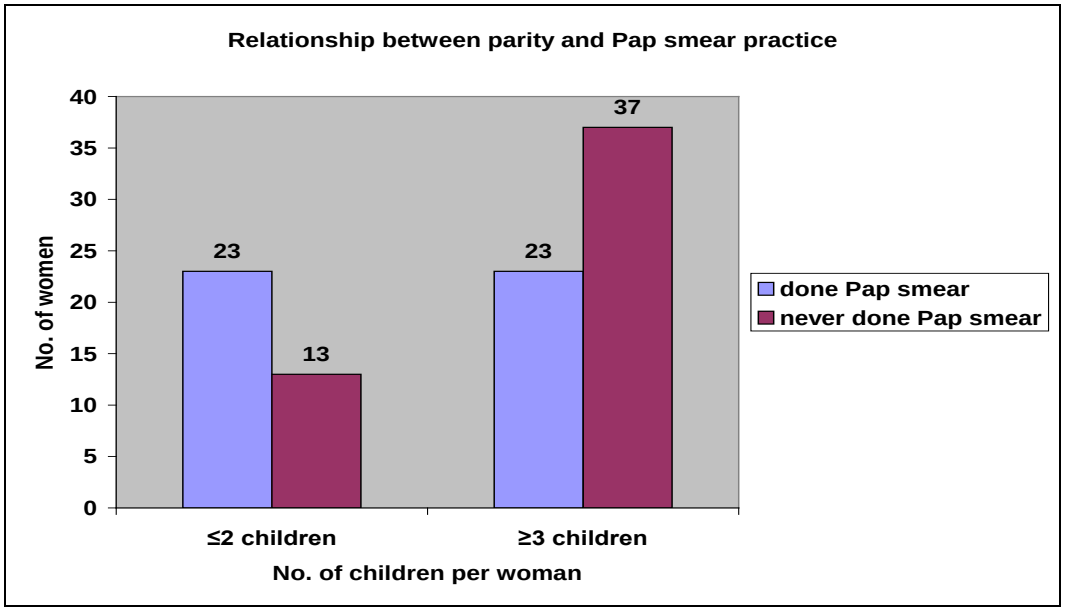

Figure 11: Number of women who have ever had Pap smear by parity. (n = 96)

Figure 11 shows the relationship between parity and practice of Pap smear. (See definitions of variables). It shows that, of the women who had three or more children, the majority of them have not had a Pap smear done. (High parity is a risk factor for cervical cancer). Among those with lower parity, (two or less), more of them have had Pap smear done.

Negative attitude towards Pap smear refers to those who knew how a Pap smear is done, and have reasons that makes them reluctant to do the test again. Some of the reasons for being reluctant relate to experience with staff attitude, experience of the procedure being painful, perception that there is not enough privacy or lacking time to go to the clinic for the procedure. Those who responded that they had no difficulty in doing the Pap smear are regarded as not having a negative attitude towards the procedure.

Table 6: Practice and Negative Attitude towards Pap smears

	Frequency	**Percent**	**95% Conf Intervals**	
Practice (Ever had Pap smear done):				
Yes	46	48.4	38.0	58.9
No	49	51.6	41.1	62.0
Know how Pap Smear is done:				
Yes	49	51.6	41.1	62.0
No	46	48.4	38.0	58.9
Reason for not doing it:				
Lack knowledge	11	22.4	11.8	36.6
Lack of privacy	1	2.0	0.1	10.9
Lack of time	8	16.3	7.3	29.7
None	20	40.8	27.0	55.8
Procedure painful	8	16.3	7.3	29.7
Staff attitude	1	2.0	0.1	10.9
Have negative attitude towards it:				
No	20	40.8%	27.0	55.8
Yes	29	59.2%	44.2	73.0

The above table shows that 46 out of 96 participants (48%) indicate that they have had a Pap smear done. This is regarded as practice. Forty nine (49) out of 96 participants (51.6%) indicated that they knew how a Pap smear is done. Of the 49 who knew how a Pap smear is done, it was determined whether they had any difficulty in doing a Pap smear. Of those, twenty (41%) did not have a problem with doing a Pap smear. The others had several reasons for not wanting to undergo a Pap smear, and thus had a negative attitude towards it

Table 7: Knowledge and practice of respondents by socio-demographic variables

Socio-demographic variables		Knowledge			Practice		
		No.	**%**	**p-value**	**No.**	**%**	p-value
Age group:	30 – 39 years	12	33	0.44	17	37	**0.55**
	40 – 49 years	10	28		12	26	
	50 – 59 years	14	39		17	37	
Parity:	≤ 2 children	18	50	0.05	23	50	**0.018**
	≥3 children	18	50		23	50	
Employment:	Employed	14	39	0.87	20	43	**0.354**
	Unemployed	22	61		27	58	
Level of education:	Primary or none	12	33	0.46	16	34	**0.559**
	Secondary	18	50		23	50	
	Tertiary	**6**	**17**		**7**	**15**	

*Chi-square p-values

Table 7 presents the relationship between socio-demographic characteristics and knowledge about, and practice of Pap smear. Thirty-six (36) of the women in the study had knowledge of Pap smear. Forty six of the women had undergone a Pap smear.

The results indicates that the majority (39%) of women who had knowledge of Pap Smear are in the age range 50 – 59 years of age, followed by those in the

age range 30 – 39 years at 33%, but they failed to display any statistical significance (p=0.44).

Although 18 women with low parity and 18 with high parity were knowledgeable about Pap smear, majority of those with higher parity were not knowledgeable about it (Figure 9). From those with three or more children, 42 were not knowledgeable, whereas those with two or fewer children, 18 were not knowledgeable. The results show a statistically significant relationship (p-value =0.05) between knowledge and parity.

Level of education did seem to have a role in knowledge of Pap smear, since six out of eleven with tertiary education did know about Pap smear, compared to eighteen out of 51 of those with secondary education, and twelve out of 34 of those who had primary or no education. There was however no statistical significance (p-value=0.46).

Practice of Pap smear did not differ much between the different age groups. According to Figure 10, the number of women who had done Pap smear was relatively higher in the age group 50 – 59 years, as opposed to those in the age groups 30 -39 years and 40 – 49 years. The relationship between age and practice of Pap smear did not show any statistical significance (p-value=0.55).

Among the women with low parity, (Figure 11), 23 out of 36 had done Pap smear. Among the women with high parity, 23 out of 60 had done Pap smear, implying that the majority of them had not done Pap smear. This was statistically significant (p-value=0.02). Women of lower parity had significantly undergone relatively more Pap smears than those with higher parity.

Seven out of 11 of those with tertiary education had undergone a Pap smear. Twenty three (23) out of 51 of those with secondary education had undergone a Pap smear. Sixteen (16) out of 34 of those who had primary or no education had undergone a Pap smear. Difference in the level of education relative to practice of Pap smear showed no statistical significance. (p-value=0.559).

Table 8: Knowledge and Practice as related to who informed the service users.

Information source		Knowledge			Practice		
		No.	**%**	**p-value**	**No.**	**%**	p-value
Informed by Doctor	Yes	16	44	0.152	28	58	**0.001**
	No	20	56		20	42	
Informed by Nurse	**Yes**	**22**	**61**	**0.010**	**33**	**70**	**0.001**
	No	**14**	**39**		**14**	**30**	

In the above table, analysis was done on the relationship of knowledge and practice to information being given by a doctor or a nurse. The variable: nurse informed me about Pap smear, showed that more women who were informed by the nurse were knowledgeable about Pap smear. This was statistically significant (p-value=0.010).

Of those who got information about Pap smear from the doctors, 58% underwent Pap smear, with statistical significance (p-value=0.01). Of those who got information from nurses about Pap smear 70% of them had undergone Pap smear, with statistical significance (p-value=0.001). There is thus statistical significance in the practice of Pap smear between those being informed by both the nurse (p-value=0.001) and the doctor (p-value=0.01).

Table 9: Negative Attitude to Pap smear by socio-demographic variables.

Socio-demographic variables		Negative Attitude		
		No.	%	p-value
Age group:	30 – 39 years	15	52	0.09
	40 – 49 years	8	28	
	50 – 59 years	6	21	
Parity:	≤2 children	15	52	0.64
	≥3 children	14	48	
Employment:	Employed	12	43	0.34
	Unemployed	16	57	
Level of education:	Primary or none	8	29	0.22
	Secondary	13	46	
	Tertiary	7	25	

*Fisher exact p-values

According to Table 9, most of the women who had a negative attitude towards Pap smear were in the age group 30 – 39 years. (p-value=0.09). Parity had no relationship to negative attitude towards Pap smear. More women with a secondary education had a negative attitude to Pap smear. This was not statistically significant (p-value=0.22).

In summary, the knowledge about Pap smear among the women aged 30 – 59 years, who attended at Holani clinic and Stanza Bopape Community Health Center was significantly associated with being informed by a nurse. Also significant was the knowledge of Pap smear among women with lower parity.
The practice of Pap smear was significantly associated with being informed by both the nurses and the doctors. The practice of Pap smear was also significantly associated with lower parity.
Negative attitude towards doing a Pap smear was significant in those women who had secondary education.

4.3. Perception of Service Providers:

The findings of the self administered questionnaires completed by the Doctors and Professional Nurses at Stanza Bopape, were as follows: Twenty four (24) questionnaires were handed out, and only six were completed and returned (two doctors and four professional nurses). This gave us a response rate of 35%. At Holani clinic, five questionnaires were handed out, and three of them were completed and returned (one doctor and two nurses). This gave us a response rate of 60%.

Service Providers responses:

In both clinics, the results of the study indicated that there is enough privacy for Pap smear, and the resources for Pap smear are adequate.

Table 10: Availability of resources and privacy for Pap smear

			Holani		Stanza Bopape CHC	
			No.		No.	
Facility staff interviewed.						
Nurse			2		4	
Doctor			1		2	
Have enough privacy for Pap smear.						
Yes			3		6	
No			-		-	
Have all resource for Pap smear.						
Yes			3		5	
No			-		1	
Do you do Pap smear on patient	Nurse	Yes	2		3	
		No	-		1	
	Doctor	Yes	1		1	
		No	-		missing	

Knowledge and Practice of Service Providers:

Of the six professional nurses interviewed five said they do Pap smear on patients, and two of the three doctors said they do Pap smear on patients.

On whether women voluntarily request Pap smears, 50% of the service providers said they sometimes do, and 50% mentioned that they always or regularly request Pap smear. Two of the doctors did not know about the DHIS tally sheets, and one of the nurses did not know about the Pap smear register. Though majority of service providers - seven out of nine mentioned that they always or regularly suggest Pap smears to their patients, majority of them said that they only do Pap smears on their patients when the patients request it.

Table 11 Knowledge of the cervical cancer policy among the service providers.

	Number of Pap smears per patients allowed per life time		
Age group that it covers	3	5	TOTAL
20 - 50 years	**0**	**3**	**3**
30 - 50 years	**1**	**0**	**1**
30 - 59 years	**3**	**2**	**5**
TOTAL	**4**	**5**	**9**

All the respondent doctors said they knew about the cervical cancer policy, and correctly identified the target age group, but one out of three did not know the duration of years between the smears. All but one nurses said they knew about the policy, but only two out of six mentioned the correct age group, and two out of six mentioned the correct duration of years between smears. There is therefore inadequate knowledge of the cervical cancer screening policy among service providers.

Table 12: Knowledge of policy by service providers:

Know Policy	Frequency	Percent
No	6	66.7%
Yes	3	33.3%
Total	9	100%

Knowledge of the policy in this instance implies knowing both about the age group (30 – 59) and the number of Pap smears allowed per life time (3). Therefore, only three Service Providers have knowledge about the policy. This, however, is limited by the low response rate among the Service Providers of 35% (Stanza Bopape CHC) and 60% (Holani clinic), thus the wide confidence interval.

4.4. The health system's determinants of uptake:

The health system's determinants of uptake of cervical cancer Pap smears screening test. This objective sought to determine the preparedness of the facility to render the Pap smear service. This is determined in terms of human resource, private space, equipment and service provider awareness.

Facility Infrastructure and Management.

One Facility Manager was interviewed from each facility.
Facility managers' responses are tabled below.

Table 13: Distribution of resources by health facility

		Holani Clinic	Stanza Bopape CHC
Personnel:			
No. of doctors	Full day	1	6
	Half day	0	1
No. of Prof Nurses		9	32
No. of nurses doing Pap Smear		9	4
No. of trained Prof Nurses		6	3
Infra-structure:			
No. of consulting rooms		6	15
No. of private consulting rooms		5	15
No. of rooms used for Pap Smear		5	2
No. of exam lamps		5	6
No. of specula per room		4	-

Readiness and Capacity of the Facilities:

There are seven doctors employed at Stanza Bopape Community Health Center, of these, six are working full time. About 32 professional nurses are employed, and only four are involved in administering Pap smear tests. Three of these four nurses have had appropriate additional training in the indications for, administration and conduct of Pap smear tests. The clinic has 15 private consulting rooms, but only two are equipped and used for gynaecologic

examination and the conduct of Pap smear test. There are only six examination lamps. Two are placed in the consulting rooms used for Pap smear, and the other 4 are in consulting rooms that are used by doctors.

Holani clinic has one doctor employed full time, together with nine professional nurses. Six of the nine professional nurses have had appropriate additional training in the indications for, administration and conduct of Pap smear test. However, all of the 9 professional nurses administer Pap smear tests. The clinic has six private consulting rooms, but only five are equipped and used for Pap smear.

Both facilities do keep a Pap smear register, and specimens are sent on a daily basis to the laboratory. They both stated that it takes less than 24 hours for the specimens to reach the laboratory. They both follow up defaulting patients who have positive results by using a messenger.

Both facilities have Health Educators (called Health Promoters) who work both at the facility and in the community levels. Stanza Bopape had no posters and no IEC materials for Pap smears, whereas Holani clinic had both posters and IEC materials within the facility.

CHAPTER 5

5. Discussion

5.1. Coverage:

5.1.1. Holani clinic:

The proportion of women who had Pap Smear done at Holani clinic, during the period January 2004 to July 2007 was 8%. The initial aim of the policy was to screen at least 70% of the women from the target group within ten years. The target was subsequently changed in the Strategic Plan for the Department of Health to 20% by 2007/8 [45]. This clinic only managed to test 8% of the women in the target age group who came to the clinic, over a period of three and half years. If they continue at this rate, they will not reach the required 70% in ten years. The Gauteng Department of Health announced in 2007 that it had screened 21% of the women of the target group since inception of the policy. Performance of the Holani clinic falls far short of the provincial figure. The Cervical cancer Screening manual gives guidelines on how to calculate daily targets for individual facilities [1]. Calculation of the number of smears that this facility should do per year according to the guidelines is as follows:

Target group in 10 years = 4199

Estimated number of clients that need to be screened per year = 4199/10 = 420

Number of working days for the clinic = 365 – [126(weekends + public holidays)] = 249.

The facility should target to perform at least two Pap Smears per day, on those patients who had not undergone Pap smears test within the previous 10 years. Currently, given the number of Pap Smears that were performed during the 3½ year period, they were performing 420 / (249x3½) = 0.56 or one client in two days, which is inadequate. Given the target population, and the new targets for Cervical Cancer Screening according to the National Strategic Plan 2007/8 – 2009/10; if the facility can target two new Pap smears per day, they will be able to cover 20% by the end of 2009/10 and 31% by the end of 2010/2011. New

Pap smear implies that a Pap smear had not been performed during the previous 10 years. This does not include repeat smears. This is feasible provided effective implementation is made by the beginning of the 2009/10 financial year. The services would be able to catch up with the targets for NSP in about three years' time. They would, however, have missed the target of the National Cervical Cancer Screening Policy of 70% in 10 years. The figure of two smears per day is more practical for the facility to reach.

5.1.2. Stanza Bopape CHC:

The average number of women aged 30 – 59 years seen at the clinic on a monthly basis is ±2100, based on the figure for February 2007.
An average number of Pap smears done on a monthly basis is 78. The average is calculated from: (86 + 72 + 75 = 78), as indicated on page 27.
Using the calculation from the guidelines, the number of Pap smears that they need to target every month is 7% of 2100 = 147.
The number of working days in a month is 23.
Thus the estimated number of daily Pap smears that they need to do is: 147/23 = 6.

The current Health Service Users

Demographics:

The majority of the women who participated in the questionnaire were unemployed (62%). The assumption is made here that they will have ample time to stay longer and be attended to at the clinic, or to frequent the clinic when invited to. Therefore opportunities should be used by the service providers to talk more often and invite patients for Pap smears. In the age group 30 to 49 years, there are more women who had not undergone Pap smears as compared to those who had. In the age group 50 – 59 year, more women had undergone Pap smears as compared to those who had not. This is encouraging because age is a risk factor for cervical cancer. The frequency of Pap smear testing should rise with age. Majority of the respondents had three or more

children. The study also showed that, in the group with lower parity (one to two children), more women had done Pap smears compared to the group with a higher parity (three or more children), where less women had done Pap smears. This is also a concern because multi-parity is mentioned as one of an associated risk factor for cervical cancer. Literature indicates the importance of health education and level of socio-economic status as the main contributing factors for the uptake of cervical cancer screening [(22) (24)]. It is encouraging to see that only 4% of our respondents had no schooling at all, though we would like to have this figure at zero. Fifty three percent had secondary education, and only 11% had tertiary education. This may imply that the majority of those with tertiary education are either at work, or having medical aid and not coming to the clinic. There is a correlation between level of education and knowledge, practice and attitude, with those having secondary and tertiary education being more knowledgeable and practicing cervical cancer screening more than the other group comprising of primary education. This was however, not statistically significant. A Cochrane review by Forbes et al showed that the use of educational material has limited effect on the uptake of cervical cancer screening, whereas invitations appeared to be an effective method of increasing the uptake [(49)].

Access:

Most of the respondents (67%) are able to reach the clinic within less than 30 minutes. This means geographical access is not a limitation for them. In the Eastern Cape, the need for introducing VIA [(35)] is as a result of limited geographical access for most clinic attendants. The introduction of VIA in most developing countries became necessary because the distance from the women's homes to the health facility is too far, and they may not be keen to come back repeatedly to the clinic. This makes the system of having to return for Pap smear results a limitation for these women. The HST report shows that, in some provinces, like the Eastern Cape, Northern Cape and Limpopo, women have to walk long distances to reach the health facility. This is not the case with health

facilities in Gauteng. Although 43% of the women have to use some means of transport, majority of them still reach the clinic within less than 60 minutes.

Access may not only be geographic. Factors such as having to pay for the service, attitude of the service providers and easy entry to the facility may hinder access. According to our findings, the most important factor in encouraging women to do Pap smear was being informed by the nurse. This variable was statistically significant for both aspects of knowledge and practice. It is thus important for the nurse to provide women with sound and accurate information about cervical cancer and its screening [43]. A study was done among nurses in Nigeria, where they found that only 5.7% of them had ever done a Pap smear [28]. Another study done in Uganda among medical workers at Mulanga hospital found that 81% of them had never done a Pap smear [10]. These are the very people who are supposed to be encouraging women to do Pap smear. Further training of nurses and doctors, and providing ongoing information is important to keep them abreast of new developments. It is equally important for the service providers to adopt the Batho Pele principles, by treating patients with courtesy, and giving them information.

Service Providers:

The response rate for service providers was too low (35% at Stanza Bopape CHC and 60% at Holani clinic) for the researcher to make any inference about the findings. The few respondents however indicated that they do talk to their patients about Pap smear, though they did not all seem to be knowledgeable about the cervical cancer policy. According to the policy, the Pap smear is a procedure that can be done at a primary healthcare facility, by the Professional nurse and doctor. The role of the nurse is thus important in sensitizing the women about cervical cancer screening. In order to detect cancer at an early stage, the nurse in the primary healthcare setting should take the majority of smears [43]. While looking at the records, the researcher noted that most of the files had a form that need to be filled at the first consultation, which had a question on whether a Pap smear had been done or not. There was about 40%

of the files where the service provider noted that a Pap smear was not done, but did not indicate in the notes whether he / she did invite the patient to do a Pap smear.

Facility Management.

Resources:

Holani clinic has all the infrastructural requirements for an effective cervical cancer screening program. According to the Facility Manager, confirmed by the researcher, there are adequate private rooms with resources for each Service provider to do regular Pap smears. Each consulting room has a bed, lamp, specula, glass slides, spatula, fixative spray and laboratory forms. They also sterilize their equipment at the facility, and the specimens are sent to the laboratory on a daily basis. The turn around time for Pap smear results for both facilities is more that a week. When the results come back, they are entered in the Pap smear register. According to the facility manager, if results come back positive, they send a messenger to recall the patient. This clinic also had posters that inform patients about Pap smears, and they had IEC materials that patients could take home. The Health Promoters (wrongly named because they are really Health Educators) do talk to the patients about Pap smears, though they had not been formally trained in this field. Most requirements for a cervical screening program are met at this facility.

Stanza Bopape has its own operational policy. The facility does not have all the consulting rooms used for cervical cancer screening. They use only one room for that, and though some of the doctors say they do Pap smears in their consulting rooms, most nurses don't. The cervical cancer screening policy does accommodate such an arrangement. It is however stated that, when they opt for this arrangement, the service providers should make sure that they are able to cover the required number of women. The number of smears that need to be done can easily be achieved using the system that is in place of using one consulting room for Pap smears. If the status quo is maintain, there is no need

to train more nurses on performing Pap smears. The 6 Pap smears that can be done daily can be managed by using one consulting room and the 4 nurses who can do Pap smears. This, however still imply that the other staff members should be encouraged to recruit and refer the women of the target age group so as to reach the target coverage. The limitation with this system is that, when patient come to consult for one aliment, they may be reluctant to undress again in another consulting room just for Pap smear. Thus, they may keep postponing the date for the procedure. This situation may thus create missed opportunities.

Cervical Cancer Screening Program:

There are several factors that contribute towards a successful cervical cancer screening program. Though not all contributing factors could be covered in this study, there are some aspects that have been identified as being in place to make the program successful. Essential elements for a successful Pap smear program include [31]:

- Training of relevant health care professionals, including smear takers, smear readers, colposcopists, and program managers.
- Adequately taken smears
- Means of rapid transportation of specimen
- A mechanism for follow up of positive results.
- A mechanism to invite women with negative smears for subsequent smears. (This part is not accommodated in our National policy, but has proved to be beneficial in developed countries).

- Training of healthcare professionals should not just be on how to do the Pap smear, but also information about the epidemiology and the rationale behind the policy, so that they can understand why they have to actively recruit clients. This is covered adequately in the training manual [1].The service providers who have been trained, do know about the policy, but most doctors and some of the professional nurses who were not trained further may not know about the policy. This is shown by the fact that they did not know the target age group. From the results, only 3 service providers could show adequate knowledge of the cervical cancer policy. This is a limitation because, without understanding

the policy, they would not actively invite/recruit the patients. There is a need to extend the training to all the professional health providers. In the case where most of the professional staff don't do Pap smears, opportunities for information about missed opportunities and the policy can be created during staff meetings.

- Adequacy of Pap smears is another problematic issue that was raised by the Service Providers to the researcher during the interaction with them. This is another area that needs research. Sensitivity of Pap smear is about 51%, and therefore, if the specimens taken are not adequate, patients may have be reluctant to do a repeat smear, or be lost through failure to return to the facility. An analysis of specimen adequacy can easily be done through the National Health Laboratory Services (NHLS), where they can identify the rate of specimen inadequacy for each Service Provider, and then consider re-training where necessary.

- Handling of specimens to the laboratory is not a problem for these two facilities, since they send their specimens on a daily basis to Mamelodi hospital which is not far. The facility managers both mentioned that it takes them less than 24hours for the specimens to reach the laboratory.

- Follow up mechanism for positive results: The facility managers did mention that they either phone or send a messenger, but the Service Providers themselves did not have a reliable way of doing this, since some of them said they inform the patients during the date of the next appointment. This can lead to a problem of loss to follow up. The Health Promoters in both facilities are both facility and community based. They can therefore be utilized to recall patients who do not have contact details. To implement the recall system, there has to be a properly maintained Pap smear register.

- Active invitation of eligible women with negative smears for subsequent smears. The Pap smear program in developed countries has shorter recall

methods, namely, after 3 years. They also have a much better telecommunication system, and patients are phoned to be reminded about the next appointment. In our situation, despite the advance in technology, having to follow up somebody after 10 years may be a challenge. However, most people have cellular phones. It is therefore necessary to have every patient's telephone number written on the file, together with the next appointment date for a smear.

Limitations of the study.

Generalization:

It would have been better to do a population survey of the women in the age group concerned; however, due to the high cost of a population survey, the research could only be done within these two facilities. Only women using the Public healthcare facilities were researched. The results can therefore not be generalized. It is assumed that all cervical cancer screening tests are done at the primary healthcare facilities, and the hospitals only manage those referred.
The study could not be conducted at Local Authority clinics in Mamelodi, due to the absence of details in daily records that reflect the patient's age.

Poor response among Service Providers:

Collecting data from service providers was very difficult as they tend to be very uncooperative. Most of them felt that the questionnaire was not appropriate since they do not do Pap smears. Those questionnaires that were misplaced were never recovered. The Facility Manager was not available, so her Deputy is the one who answered the questionnaire.

Incomplete Pap smear register:

Stanza Bopape CHC had incomplete Pap smear register. Dates were missing, even those for 2007. The nurses who work in the Pap smear consulting room did not have knowledge of where to get the rest of the register. Some of the

pages were found at records department. They use A2 pages that are loose, with no date sequence. (See Annexure 6). The daily register for patients were available, though in some instances the clerks did not record the patients' ages. Due to inadequacy of the information, the percentage of women who had Pap smear during the five years at this facility could not be determined.

Holani clinic only started operating in December 2003. Data used was therefore from January 2004 to July 2007 (the intension was to use records from August 2004).

Notwithstanding these limitations, the study has provided valuable insight on the uptake of cervical cancer screening and factors that affect it, in an urban well established settlement that has adequate primary health care coverage, The low uptake of cervical cancer screening that has been observed in this study is likely to be better than the uptake in the poorly served informal settlements and rural communities of South Africa. Greater effort is required to ensure that the services that are being offered deliver the results that they are aiming for.

CHAPTER 6

6. Conclusions

6.1. The extent of Pap smear:

The proportion of women who had Pap smears done at Holani clinic is below the target for the Department of Health, and need to be scaled up.

6.2. Knowledge, Attitude and Practice:

Getting information about Pap smear from the nurses is the most significant method of improving the knowledge, attitude and practice of cervical cancer screening among women aged 30 – 59 years. Recruitment of women aged 30 – 59 years to do Pap smear should be strengthened by the nurses. More women of higher parity do not do Pap smear, as compared to those of lower parity. Levels of education, age and frequency of visits to the clinic by the service users have no significant effect on their knowledge, attitude and practice of cervical cancer screening.

6.3. Health Systems Determinants:

There is enough privacy, resources and opportunities for doing Pap smear on the women of the target group in the 2 clinics. We cannot make any conclusions on the knowledge and practice of Service Providers, because the response rate was low (35 – 60%). From the responses, it is evident that the Service Providers think that they know about the National Department of Health's Policy on Cervical Cancer Screening in South Africa, but results show that only 3 out of 9 have enough knowledge about the policy.

CHAPTER 7

7. Recommendations:

7.1. Coverage:

7.1.1. Holani Clinic:

Each Professional Nurse and Doctor should aim to do **at least** two new Pap smears per week. This should be communicated to all the responsible personnel by means of a memo from the Facility Manager. Since the five consulting rooms are occupied on a daily basis, they will be able to do 10 or more smears per week if they each adhere to the minimum requirements. Those who work on Saturdays can also use the time to do the smears.

7.1.2. Stanza Bopape CHC:

The one consulting room that is dedicated for Pap smears can easily handle more than six smears a day. The three Professional Nurses who are trained in doing Pap smears can alternate on a daily basis to avoid burn out. If they aim to exceed the target number of six new patients per day, they will manage to increase coverage.

7.1.3. Information System:

Improve record keeping and Health Information Systems for Pap smears at Stanza Bopape Community Health Center.

7.2. Service Users:

Information dissemination can be done through various methods. September is cervical cancer awareness month for Cancer Association of South Africa. Health Educators can target places like churches and other women's association or organizations to increase awareness during this month. Training for peer educators should include older women within the same cultural background to

be able to recruit their peers since knowledge and practice are low in the older age group. Women over 59 years who have never had a Pap smear should also be encouraged to do one Pap smear.

7.3. Service Providers:

Nurses and Doctors at the Primary Healthcare centre should be trained on recruiting patients for Pap smear. Information sessions by the Facility Manager can be incorporated into the staff meetings. In a facility like Stanza Bopape, where most professional staff do not do Pap smear, training can be done in-house. Training on missed opportunities and the National policy is essential for all staff members. Since the practice of Pap smear is less in the women with three or more children, the Service Providers should be encouraged to target these women, because multiparity is a risk factor for cervical cancer. Although the practice of Pap smear is more in women aged more than 50 years, the Service Providers should still be encouraged to improve coverage, since age is a risk factor for cervical cancer. The Facility Managers should obtain the policy document and give it to each service provider. The Service Provider should also check the history sheet, which indicates whether a Pap smear was done and when, and act according to the information on that sheet. Health Educators should be trained on how to encourage women to go for Pap smears. They do not need to explain the procedure to patients. This will be done by the professional staff.

7.4. Resources:

Both facilities should ensure ongoing sterilization of equipment to have them ready for use at all times, to avoid missed opportunities. This will be necessary since the number of smears done on a daily basis will increase with the implementation of the recommendations for the minimum number of smears to be taken per facility. This is the responsibility of the manager to ensure that supply is not depleted. The Facility Manager for Stanza Bopape should assist

the Health Educators in obtaining promotional material since it is available at National Health offices.

8. References

1. Moodley J, Hoffman M, Daries V, Kawonga M, Robertson J E, et al. Implementing Cervical Screening in South Africa Volume II: A Guide for Trainers. CHIP 2004.
2. Stevens M, Bomela N. Cervical Cancer – Is vaccination the way to go? Health Systems Trust. May 2008:37 http://www.hst.org.za/publications/745 last visited on 27/10/2008
3. Kawonga M, Moodley J, Bradley J, Hoffman M. Implementing Cervical Screening in South Africa Volume I: A Guide for Program Managers. CHIP 2004.
4. Nanda K, McCrory D C, Myers E R, Bastian L A, Hasselblad V, et al. Accuracy of the Papanicolaou Test in Screening for and Follow-up of Cervical Cytologic Abnormalities: A Systematic Review. Ann Intern Med. 2000;132(10):810-819.
5. Lewis MJ. A Situational Analysis of Cervical Cancer in Latin America and the Caribbean. PAHO, 2004.
6. Alliance for Cervical Cancer Prevention. Planning and Implementing Cervical Cancer Prevention and Control Programs – A manual for Managers. WHO publication, 2004.
7. Megevand E, Denny L, Dehaeck K, Soeters R, Bloch B. Acetic Acid Visualization of the Cervix: An Alternative to cytologic screening. In: Visual Inspection of the Uterine Cervix with Acetic Acid (VIA). A Critical Review and Selected Articles. PAHO Publications. 2003:58–61.
8. Ansink A C, Tolhurst R, Haque R, Saha S, Datta S, et al. Cervical Cancer in Bangladesh: community perceptions of cervical cancer and cervical cancer screening. Roy Soc Trop Med & Hygie. 2008; **102**: 499 – 505.
9. Mutyaba T, Mmiro F A, Weiderpass E. Knowledge, attitudes and practices on cervical cancer screening among the medical workers of Mulango Hospital, Uganda. BMC Med Educ; 2006; **6**:13.

10. WHO / ICO. HPV Information Centre. Human Papillomavirs and Cervical Cancer. Summary Report: South Africa. 2007.
11. Mqoqi N, Kellett P, Sitas F, Jula M. Incidence of histologically diagnosed cancer in South Africa, 1998 – 1999. National Cancer Registry. South African National Health Laboratory Services. Dec 2004.
12. Department of Health. Statistical Notes. May 2001; **3** 5,
13. Moodley M, Mould S. Invasive cervical cancer and human immunodeficiency virus (HIV) infection in KwaZulu-Natal, South Africa. J Obstet Gynaecol, 2005; **25**(7): 706 – 710.
14. Burd E M, Human Papillomavirus and Cervical Cancer. Am Soc Microbiol. 2003. **16**;(1):1-17
15. WHO – UNFPA. Preparing for the introduction of HPV vaccines: Policy and Program Guideline for countries: 2006.
16. Voglino G, Poso F, Privitera S, Parisio F, Ghiringhello B, et al. The role of human papillomavirus in cyto-histological practice: distribution and prevalence of high-risk strains (16, 18, 31, 33, and 35) in intraepithelial lesions and neoplasia of the uterine cervix. Pathologica. 2000; **92**(6):516-23.
17. Buechler E J. Pap tests and HPV infection. Postgrad Med. 2005; **118** (2): 37 – 46.
18. WHO Weekly Epidemiological record. 17 May 2002.
19. Marion S, Bomela N. Cervical Cancer – Is vaccination the way to go? Health Systems Trust. DENOSA journal. 2008:p37
20. Denny L. Prevention of cervical cancer. In: Health Systems Trust. South African Health Review 10/2006:333-346.
21. Shanta V, Krishnamuthi S, Gajalakshmi CK, Swaminathan R, Ravichandra K. Epidemiology of Cancer of the Cervix – global and national perspective. J Indian Med Assoc. 2000 Feb; **98**(2) 49 – 52.
22. Recardo S, Jeinstien L; The role of education in the uptake of preventative health care: The case of cervical screening in Britain. J Soc Sci Med.2005;**11**(32)

23. Elovainio L, Nieminen P, Miller A B. Impact of cancer screening on women's health. Int J Gynaecol Obstet. 1997; **58**: 137 – 147.
24. Cronje H S. Screening for cervical cancer in the developing world. Best Pract Res Clin Obstet Gynaecol. 2005; **19**(4): 517 – 529.
25. National Department of Health – South Africa. National strategy for the implementation of the cervical cancer screening program. August 2003.
26. Moodley J, Kawonga R. Bradley M A, Hoffman M. Challenges in implementing cervical screening program in South Africa. Cancer Detect Prev. 2006; **30:361** – 368.
27. Lockwood-Rayermann S. Characteristics of participation in cervical cancer screening. Cancer Nurs.2004; **27**(5): 353 – 363.
28. Udingwe G O. Knowledge, attitude and practice of cervical cancer (Pap smear) among female nurses in Nnewi, South Eastern Nigeria. Niger J Clin Pract.2006; **9**(1):40 – 43.
29. Wright TC, Denny L, Kung L, Pollack A, Lorincz A. HPV DNA testing of self-controlled vaginal samples compared with cytologic screening to detect cervical cancer. J Am Med Assoc. 2000 Jan 5: **283**, (1).
30. Cervicalcancer.org. Cervical Cancer Statistics. 2006. http://www.cervicalcancer.org/statistics.html Last visited on 27/10/2008.
31. Gakidou E, Nordhagen S, Obermeyer Z. Coverage of cervical cancer screening in 57 countries: Low average levels and large inequalities. PLoSMed. 2008, 5(6):e132
32. Rossi P R, Esposito G, Brezzi S, Brachini A, Raggi P, et al. Estimation of Pap-test coverage in an area with an organized screening program: Challenges for survey methods. BMC Health Serv Res. 2006. **6**(36).
33. WHO. Cervical Cancer Screening in Developing Countries – Report of a WHO consultation – Progress on Cancer Control. Department of Reproductive Health Research. 2002.
34. The TATI Intervention. Testing New Technologies in the Test-and-treat Project, Peru – Division of Disease Prevention and Control.

http://www.paho.org/English/AD/DPC/NC/cctestingnewtech.pdf - Last visited on September 2007.

35. Department of Health, Eastern Cape Provincial Government. Eastern Cape Department of Health and Female Cancer Programme launch cervical cancer prevention project. October 2008. http://www.ecdoh.gov.za last visited on 27/10/2008.
36. Graffikin L, Blumenthal P D, McGrath J, Chirenje Z M, et al. Visual inspection with acetic acid for cervical-cancer screening: test qualities in a primary-care setting. The Lancet, 1999, 353(9156): 869 – 873.
37. Memoranda. Cervical Cancer Control in Developing Countries: Memorandum from a WHO meeting. Bulletin of the World Health Organization. 1996;74(4):345-351
38. Jeronimo J, Morales O, Jorna J, Pariona J; Manrique J et al. Visual inspection with acetic acid for caner screening outside of low-resource settings. Pan Am J Public Health. 2005,17(1):1-5
39. Dignan M, Bahnson J, Sharp P, Beal P, Smith P, et al. Implementation of mass media community health education: the Forsyth County Cervical Cancer Prevention Project. Health Educ Res.Sept 1991 **6**(3):259-66.
40. Selley JM, Irwig LM, Simpson JM, Macaskill P. Evaluation of a mass-media-led campaign to increase Pap smear screening. Health Educ Res.1991 Sept **6**(3): 267-77.
41. Jenkins CN, McPhee SJ, Bird JA, Pham GQ, Nguyen BH. Effect of a media-led education campaign on breast and cervical cancer screening among Vietnamese-American women. Prev Med. 1999 April28 (4): 395-406.
42. Alliance for Cervical Cancer Prevention. The Pap Test: Evidence to date. http://www.alliance-cxca.org last visited on October 2007.
43. Peate I. Cervical cancer 1: Role of nurses in the primary healthcare setting. Br J Nurs.1999, **8**(11): 230-234
44. Department of Health (SA). National Guidelines for Cervical Cancer Screening Programme.

http://www.doh.gov.za/docs/factsheets/guidelines/cancer.pdf last visited on October 2007.

45. National Department of Health South Africa – Strategic Plan 2007/8 – 2009/10.
46. A WHO Meeting. Control of cancer of the cervix uteri. Bulleting of the World Health Organization.1986; **64**(4):607-618.
47. Wikipedia, The Free Encyclopedia – Mamelodi, Gauteng. http://wirelessafrica.meraka.org.za/wiki/index.php/Mamelodi_Mesh last visited on 26th March 2009.
48. Hearts of Compassion. City of Tshwane – Mamelodi. Kholofelong: Place of Hope. http://www.kholofelong.co.za/pg_Mamelodi.htm last visited on 26th March 2009.
49. Forbes C, Jepson R, Martin-Hirsch P. Interventions targeted at women to encourage the uptake of cervical screening. Cochraine Database of Systematic Reviews. 2002; **3**(4). http://www.chochraine.org/reviews/en/ab002834.html last visited Sept 2008.

9. Annexures

Annexure 1 Ethics Approval

The Research Ethics Committee, Faculty Health Sciences, University of Pretoria comply with ICH-GCP guidelines and has US Federalwide Assurance. FWA 00002567, Approved dd 22 May 2002 and Expires 24 Jan 2009. IRB 0000 2235 IORG0001762 Approved dd Jan 2006 and Expires 21 Nov 2008.

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UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences Research Ethics Committee

Fakulteit van Gesondheidswetenskappe Navorsingsetiekkomitee

Date: 7/04/2008

PROTOCOL NO.	**62/2008 @ 14:27**
NEW TITLE	The extent of cervical cancer screening in Mamelodi Provincial Health Clinics.
INVESTIGATOR	**Principle Investigator:** Dr K E Letebele-Hartell **Phone:**012-3542196 **E-Mail:** manei.letebele@up.ac.za **Cell:**0832821470
DEPARTMENT	Community Health; University of Pretoria
STUDY DEGREE	M.Med (Com.Health)
SUPERVISOR	Prof J M Mathila john.matjila@up.ac.za
SPONSOR	None.
MEETING DATE	26/03/2008

This Protocol and Informed Consent and all the attatchements have been considered by the Faculty of Health Sciences Research Ethics Committee, University of Pretoria on 26/03/2008 and found to be acceptable

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* Members attending the meeting.

HW Snyman Building(South) level 2-34■Private Bag X169 Pta. S.A. 0001■Tel:(012)354 1330.
Fax:0866515924■012-354 1367■E-Mail:manda@med.up.ac.za ■Web:http://www.healthethics-up.co.za

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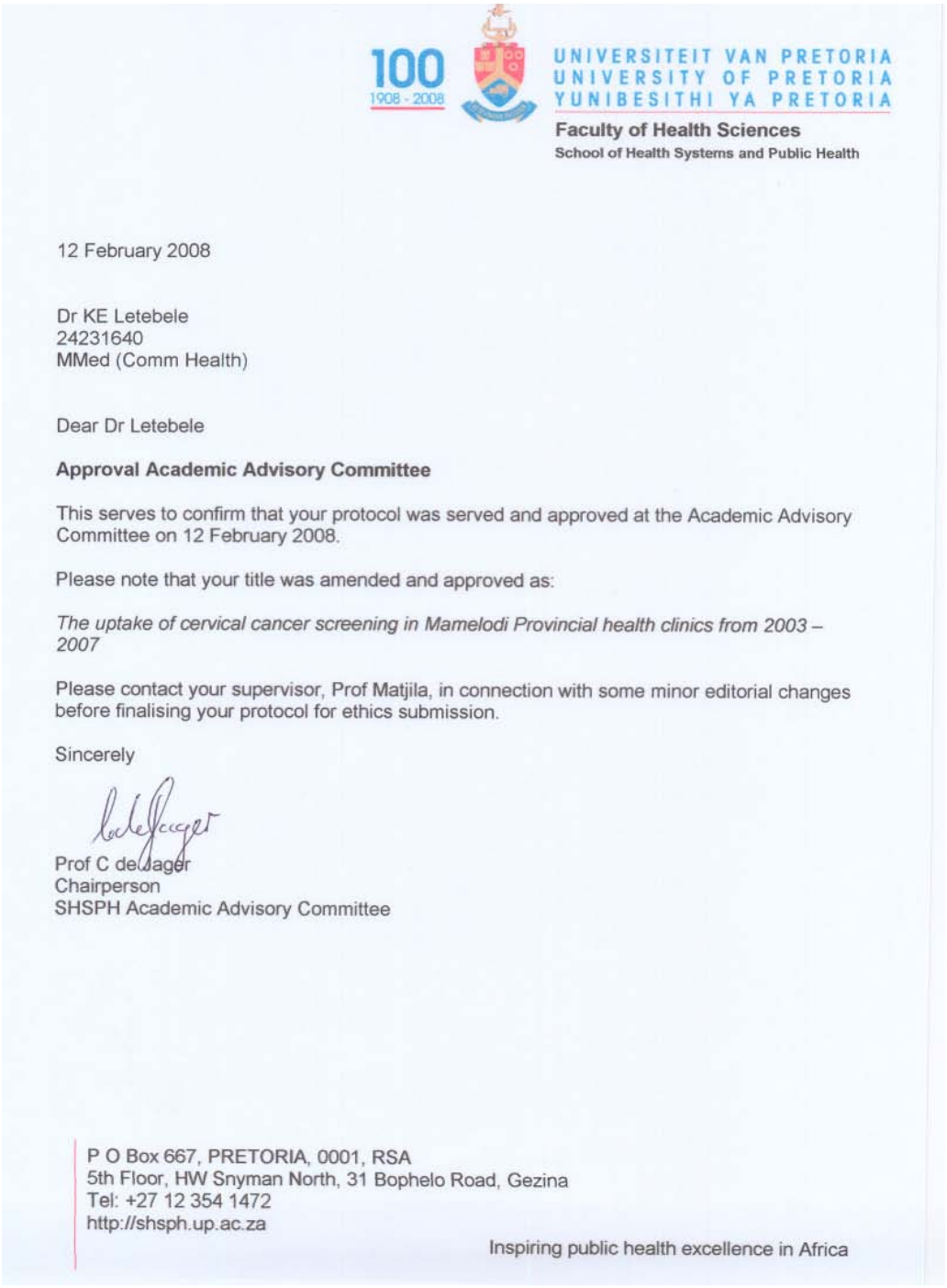
Annexure 2: Memo from Senior Medical Advisor.

Annexure 3: Approval by Academic Advisory Committee.



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UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Faculty of Health Sciences
School of Health Systems and Public Health

12 February 2008

Dr KE Letebele
24231640
MMed (Comm Health)

Dear Dr Letebele

Approval Academic Advisory Committee

This serves to confirm that your protocol was served and approved at the Academic Advisory Committee on 12 February 2008.

Please note that your title was amended and approved as:

The uptake of cervical cancer screening in Mamelodi Provincial health clinics from 2003 – 2007

Please contact your supervisor, Prof Matjila, in connection with some minor editorial changes before finalising your protocol for ethics submission.

Sincerely

Prof C de Jager
Chairperson
SHSPH Academic Advisory Committee

P O Box 667, PRETORIA, 0001, RSA
5th Floor, HW Snyman North, 31 Bophelo Road, Gezina
Tel: +27 12 354 1472
http://shsph.up.ac.za

Inspiring public health excellence in Africa

Annexure 4: Letter from Facility Manager at Stanza Bopape CHC.

01/09/2008 13:01 0123039196 MARIBA MA PAGE 01/01

GAUTENG PROVINCIAL GOVERNMENT

DEPARTMENT OF HEALTH
Stanza Bopape CHC
Stand No: 2 Shilovhane Street
Mamelodi East 0122
TEL: 012 812 0333/5/6/7/8
FAX: 012 812 0331

ATT:Dr K.E.Letebele-Hartell
P.O BOX 912-026
Silverton

Re – data collection

Dear Madam,

Sorry for the delay in responding to your letter dated 31st July 2008 re collection of Pap-smear research you are conducting.Your letter was somehow misplaced. We humbly apologise for that.

We have taken note that our Pap-smear register has gaps and the information you need for the period stated in your letter is incomplete.

We thank you for making us aware of this .We wish you well with your studies

Kind regards.
M.N MATIME. M.N Matime
Dated: 2008.08.29.

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Annexure 5: Proof of translation from Translation World invoice

THE TRANSLATION WORLD

P. O. Box 1883
Randpark Ridge
2156
South Africa

Telephone Number: 086 111 2840
International Telephone Number: 2711 792 2053
Fax Number: 086 686 8866
Email Address: thembi@translationworld.co.za
VAT Number: 4740198298
Registration Number: 2002/021756/23

Dr Manei Letebele-Hartell

Tax Invoice		Banking Details	
Date	26/02/2008	Name of Bank:	Standard Bank
Page	1	Account Number:	021535531
Document No	IN103046	Branch Code:	01810591
		Branch Name:	Sandton City
		Swift Code:	SBZAZAJJ

Account	Your Reference	Tax Exempt	Tax Reference	Sales Code	
ML561	DR MANEI	N			Exclusive

Code	Description	No. of Words	Unit	Rate per Word	Disc%	VAT	Nett Price
001	ML1946B- Zulu	1,022.00	100	0.68		14.00%	694.96
001	ML1946B- Sepedi	1,022.00	100	0.68		14.00%	694.96
001	ML1946B- Xitsonga	1,022.00	100	0.73		14.00%	746.06

ANNEXURES 3, 5 & 6
TRANSLATION

The Invoice amount is strictly payable in thirty (30) days following receipt of the material. Interest will be charged on late payments.

I hereby accept payment terms and conditions as outlined above.

Name and Surname_____ Capacity_____

Signature_____ Date_____

Sub Total	2,135.98
Discount @ 0.00%	0.00
Amount Excl VAT	2,135.98
VAT	299.03
Total	2,435.01

120+ Days	90 Days	60 Days	30 Days	Current	All Invoices Due
0.00	0.00	0.00	0.00	2,435.01	2,435.01

Annexure 6: Information leaflet and informed consent

INFORMATION LEAFLET AND INFORMED CONSENT

TITLE OF STUDY: THE UPTAKE OF CERVICAL CANCER SCREENING IN MAMELODI PROVINCIAL CLINICS

INFORMATION LEAFLET

Dear Patient/Participant

1. Introduction: We invite you to participate in a research study. This information leaflet will help you to decide if you want to participate. Before you agree to take part, you should fully understand what is involved. If you have any questions that this leaflet does not fully explain, please do not hesitate to ask the researcher, Dr. Letebele.
2. The nature and purpose of the study: The aim of the study is to understand the knowledge and practice of women about cervical cancer screening in this community. You, as a participant are a very important source of information for us to know what is happening at the clinic.
3. Explanation of proceeds to be followed: The study involves filling in a questionnaire. We will ask you some questions about your knowledge and practice of cervical cancer screening, and we will summarize the findings of all those who took part in the survey.
4. Risks and discomfort involved: There is no risk in participating in the study.
5. Possible benefit of this study: Although you will not benefit directly from the study, the results of the study will enable us to improve the screening practice among the eligible women in the future.
6. What are your rights as a participant: Your participating in this study is entirely voluntary. You can refuse to participate or stop at any time

during the interview without giving reasons. Your withdrawal will not affect your clinic attendance in any way.

7. Has the study received ethical approval? The study has received written approval from the Research Ethics Committee of the Faculty of Health Sciences at the University of Pretoria and the Provincial Health department. Copies of the approval letters are available.
8. Contact person: The contact person for this study is Dr. Keneilwe Letebele. If you have any questions about the study, please contact her at (012) 3542196.
9. Compensation: Your participation is voluntary. No compensation will be given to you for participating.
10. Confidentiality: All information that you give will be kept strictly confidential. The questionnaire is anonymous; therefore you are required not to write your name on it. Once we have analyzed the information, no one will be able to identify you. Research reports and articles in journals will not include any information that will identify you.

CONSENT TO PARTICIPATE IN THE STUDY

I confirm that the person asking my consent to take part in this study has told me about the nature, process, risks, discomforts and benefits of the study. I have also received, read and understood the information leaflet regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I am participating willingly. I have had time to ask questions and have no objection to participate in the study. I understand that there is no penalty should I wish to discontinue with the study, and my withdrawal will not affect any access to this clinic in any way.
I have received and signed a copy of this informed consent agreement.

Participant's name_____ (please print)
Participant's signature _____Date_____
Researcher's name _____ (please print)
Researcher's signature _____Date_____
Witness's name_____ (please print)
Witness's signature_____Date_____

Annexure 7: Data collection tool.

QUESTIONNAIRE FOR FEMALES CLIENTS AGED 30 – 59 YEARS PRESENT AT THE HEALTH FACILITY

1. How old are you?	30 – 39 years	40 – 49 years	50 – 59 years

2. Marital status	Single	Married	Divorced	Widowed	Living together	
3. Number of children	None	1	2	3	4	5 or more
4. Education level	Never schooled	Up to grade 7	Up to grade 12	College certificate	Technikon diploma	University degree
5. Occupation	Student	Unemployed	House wife	Unskilled	Skilled	Managerial

6. How do you get to the clinic?	On foot	Own car	Taxi	Cycle	Bus	Other
7. How long does it take you to get to the clinic?	<30 minutes	30-60 minutes	1 - 2 hours	2 -3 hours	> 3 hours	
8. How often do you come to the clinic?	Once a week	Once in 2 weeks	Once a months	Once in 2 months	Once in 6 months	Once a year

9. Do you have medical aid?	Yes	No
10. Do you have a chronic disease like diabetes or high blood pressure?	Yes	No
11. Do you bring a child to the clinic often?	Yes	No

12. Where did you hear about Pap smear?	Clinic nurse	Clinic doctor	General practitioner	Health promoter	Family	Media	Friends	Work

13. Did the doctor at this clinic inform you about Pap smear?	Yes	No
14. Did the nurse at this clinic inform you about Pap smear?	Yes	No
15. Did the doctor at this clinic suggest a Pap smear to you?	Yes	No
16. Did the nurse at this clinic suggest a Pap smear to you?	Yes	No

17. Do you think you are at a high risk for cervical cancer?	Yes	No

18. What do you think a pap smear is done for?	To detect infections	To prevent infections	To detect cancer	To prevent cancer	None of the above	Don't know

19. Do you know how a Pap smear is done?	Yes	No
20. Have you ever had a Pap smear done?	Yes	No

21. How many Pap smears have you had?	None	1	2	3	4	5	More than 5
22. When was your last pap smear done?	2007	2006	2005	2004	2003	2002	Before 2002
23. Where was your last Pap smear done?	Clinic	Hospital	General practitioner	Gynaecologist			

24. Did you go back for results?	Yes	No
25. Do you know anybody who has cancer of the cervix?	Yes	No
26. Do you have a family member who had/has cancer of the cervix?	Yes	No

27. How often are you allowed to come for pap smear	Don't know	Once a year	Once in 2 years	Once in 3 years	Once in 10 years	Once in a life time
28. What difficulty do you have with doing a pap smear	Lack of knowledge	Lack of time	Staff attitude	Lack of privacy	Don't like procedure	Procedure painful

Thank you very much for your time and taking part in this study.

Annexure 8: Information Leaflet, Informed Consent and questionnaire for Service Providers.

INFORMATION LEAFLET, INFORMED CONSENT AND QUESTIONNAIRE FOR SERVICE PROVIDERS

TITLE OF STUDY: THE UPTAKE OF CERVICAL CANCER SCREENING IN MAMELODI PROVINCIAL CLINICS

INFORMATION LEAFLET

Dear Participant

11. Introduction: We invite you to participate in a research study. This information leaflet will help you to decide if you want to participate. Before you agree to take part, you should fully understand what is involved. If you have any questions that this leaflet does not fully explain, please do not hesitate to ask the researcher, Dr. Letebele.
12. The nature and purpose of the study: The aim of the study is to understand the knowledge and practice of service providers about cervical cancer screening in this clinic. You, as a participant are a very important source of information for us to know what is happening at the clinic.
13. Explanation of proceeds to be followed: The study involves filling in a questionnaire that is provided. We will summarize the findings of all those who took part in the survey.
14. Risks and discomfort involved: There is no risk in participating in the study.
15. Possible benefit of this study: Although you will not benefit directly from the study, the results of the study will enable us to improve the screening practice among the eligible women in the clinic.

16. What are your rights as a participant: Your participating in this study is entirely voluntary. You can refuse to participate or stop at any time without giving reasons. Your withdrawal will not affect you in any way.
17. Has the study received ethical approval? The study has received written approval from the Research Ethics Committee of the Faculty of Health Sciences at the University of Pretoria and the Provincial Health department. Copies of the approval letters are available.
18. Contact person: The contact person for this study is Dr. Keneilwe Letebele. If you have any questions about the study, please contact her at (012) 3542196.
19. Compensation: Your participation is voluntary. No compensation will be given to you for participating.
20. Confidentiality: All information that you give will be kept strictly confidential. The questionnaire is anonymous; therefore you are required not to write your name on it. Once we have analyzed the information, no one will be able to identify you. Research reports and articles in journals will not include any information that will identify you.

CONSENT TO PARTICIPATE IN THE STUDY

I confirm that the person asking my consent to take part in this study has told me about the nature, process, risks, discomforts and benefits of the study. I have also received, read and understood the information leaflet regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I am participating willingly. I have had time to ask questions and have no objection to participate in the study. I understand that there is no penalty should I wish to discontinue with the study, and my withdrawal will not affect my work at this clinic in any way.
I have received and signed a copy of this informed consent agreement.

Participant's name_____ (please print)
Participant's signature _____
Date_____
Researcher's name _____ (please print)
Researcher's signature _____
Date_____
Witness's name_____ (please print)
Witness's signature_____
Date_____

QUESTIONNAIRE FOR SERVICE PROVIDERS

Name of Facility: _____

Title of Service Provider: (not name) _____

1. Do you do Pap smear on your patients?	Yes	No		
2. Did you learn to do Pap smear during your basic training?	Yes	No		
3. Have you been trained to do Pap smear after your basic training?	Yes	No		
4. If yes, how many years ago were you trained?	<1year	1-2years	2-3years	3-4years
5. How long have you been doing Pap smears?	<1year	1-2years	2-3years	>4years
6. How many Pap smears do you do per week?	<1	1-5	5-10	>10
7. How many Pap smears do you do per month?	<5	5-10	10-20	Yes>20
8. Do women voluntarily request Pap smear?	Never	Sometimes	Regularly	Always
9. Do you have all the resources needed to do Pap smears?	Yes	No		
10. Do you have enough privacy for Pap smear?	Yes	No		
11. How long does it take you to do a Pap smear?	<5 minutes	5-10 minutes	10-20 minutes	>20 minutes
12 How long does it take you to examine any other patient?	<5 minutes	5-10 minutes	10-20 minutes	>20 minutes
13 How many patients do you see in one day?	< 20	20 - 30	30 - 40	>40
14. How many women do you see in one day?	<10	10 - 20	20 - 30	>30

15. Do you talk to your patients about Pap smear?	Never	Sometimes	Regularly	Always
16. Do you suggest Pap smear to them?	Never	Sometimes	Regularly	Always

17. If so, when do you suggest it?	When they enquire about it	When they present with gynaecology problems	When they present with symptoms of cervical cancer	When they present with any other ailment

18. When do you do Pap smear on your patients?	When they request it	When they enquire about it	As per appointment	On specific days of the week
19. Do you know about the South African policy on cervical cancer screening?		Yes	No	
20. Which age group does it cover?		20 – 50 years	30 – 50years	30 – 59years
21. How many Pap smears are the patients allowed per life time?		1	3	5
22. Is the policy implemented in your facility?		Yes	No	Don't know

23. What is the average time it takes to get back your cervical cancer screening results?	<72hours	72hrs – 1week	1-2 weeks	>2weeks
24. Do your patients come back for results?	Always	Frequently	Sometimes	Never
25. Do your follow up on your patients who have positive results?	Always	Frequently	Sometimes	Never
26. If so, how do you do it?	Phoning	Through relatives	Home based carer	During next consultation
27. Do you use the cancer register at your facility?	Yes	No	Don't know it	
28. Do you use the DHIS tally sheet at your facility?	Yes	No	Don't know it	

Do you think that the uptake of cervical cancer screening for the age group 30 – 59 years in this facility is adequate? _____

What in your opinion are factors that influence the uptake? _____

_____

Thank you very much for your cooperation. It is highly appreciated.

Annexure 9: Information Leaflet, Informed Consent and questionnaire for Facility Managers.

INFORMATION LEAFLET, INFORMED CONSENT AND QUESTIONNAIRE FOR FACILITY MANAGERS

TITLE OF STUDY: THE UPTAKE OF CERVICAL CANCER SCREENING IN MAMELODI PROVINCIAL CLINICS

INFORMATION LEAFLET

Dear Participant

21. Introduction: We invite you to participate in a research study. This information leaflet will help you to decide if you want to participate. Before you agree to take part, you should fully understand what is involved. If you have any questions that this leaflet does not fully explain, please do not hesitate to ask the researcher, Dr. Letebele.
22. The nature and purpose of the study: The aim of the study is to understand the knowledge and practice of service providers about cervical cancer screening in this clinic. You, as a participant are a very important source of information for us to know what is happening at the clinic.
23. Explanation of proceeds to be followed: The study involves filling in a questionnaire that is provided. We will summarize the findings of all those who took part in the survey.
24. Risks and discomfort involved: There is no risk in participating in the study.
25. Possible benefit of this study: Although you will not benefit directly from the study, the results of the study will enable us to improve the screening practice among the eligible women in the clinic.

26. What are your rights as a participant: Your participating in this study is entirely voluntary. You can refuse to participate or stop at any time without giving reasons. Your withdrawal will not affect you in any way.
27. Has the study received ethical approval? The study has received written approval from the Research Ethics Committee of the Faculty of Health Sciences at the University of Pretoria and the Provincial Health department. Copies of the approval letters are available.
28. Contact person: The contact person for this study is Dr. Keneilwe Letebele. If you have any questions about the study, please contact her at (012) 3542196.
29. Compensation: Your participation is voluntary. No compensation will be given to you for participating.
30. Confidentiality: All information that you give will be kept strictly confidential. The questionnaire is anonymous; therefore you are required not to write your name on it. Once we have analyzed the information, no one will be able to identify you. Research reports and articles in journals will not include any information that will identify you.

CONSENT TO PARTICIPATE IN THE STUDY

I confirm that the person asking my consent to take part in this study has told me about the nature, process, risks, discomforts and benefits of the study. I have also received, read and understood the information leaflet regarding the study. I am aware that the results of the study, including personal details, will be anonymously processed into research reports. I am participating willingly. I have had time to ask questions and have no objection to participate in the study. I understand that there is no penalty should I wish to discontinue with the study, and my withdrawal will not affect my work at this clinic in any way.
I have received and signed a copy of this informed consent agreement.

Participant's name_____ (please print)
Participant's signature _____Date_____
Researcher's name _____ (please print)
Researcher's signature _____Date_____
Witness's name_____ (please print)
Witness's signature_____Date_____

QUESTIONNAIRE FOR FACILITY MANAGERS

Name of facility: - _____

Questions:

Resources:

1. How many doctors work full day in this facility?	0	1	2	3	4	5	6	7	8	9	10
2. How many doctors work half day in this facility?	0	1	2	3	4	5	6	7	8	9	10
3. How many professional nurses work in this facility?	0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20	21
4. How many professional nurses can do pap smear?	0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20	21
5. How many professional nurses have received training for Pap smear	0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20	21
6. How many consulting rooms do you have?	0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20	21

7. How many consulting rooms are private with examination couches?	0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20	21
8. How many consulting rooms do you use for Pap smear?	0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20	21
9. How many examination lamps do you have?	0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20	21
10 How many vaginal specula do you have per consulting room?	0	1	2	3	4	5	6	7	8	9	10
	11	12	13	14	15	16	17	18	19	20	21
	22	23	24	25	26	27	28	29	30	31	32

11. Do you keep glass slides?	Yes	No
12. Do you ever have glass slides out of stock?	Yes	No
13 Do you keep fixative spray?	Yes	No
14. Do you ever have fixative spray out of stock?	Yes	No
15. Do you ever have cytology request forms out of stock?	Yes	No
16. Do you have a register for Pap smear?	Yes	No
17. Do you enter women aged 30-59 doing pap smear in tally sheets?	Yes	No

Sterilization:

18. Where do you sterilize you specula?	At facility	Away from facility	
19. What methods do you use for sterilization?	Autoclave	Sterilizer	Sterilizing solution

Lab Facilities

20. How often do you send cytology specimens to the laboratory?	Daily	Every second day	weekly
21. How long does it take for specimen to reach laboratory?	< 24 hours	> 24 hours	> 48 hours
22. What is your turn around time for Pap smear results?	< 72 hours	72 hours to one week	> 1 week
23. How do you follow up patients with positive results?	Phone them	Send messenger	Wait for next consultation

Health Promotion

24. Do you have a health promoter at your clinic?	Yes	No
25. Is health promotion service clinic based?	Yes	No
26. Is health promotion service community based?	Yes	No
27. Is the health promoter trained in cervical cancer?	Yes	No

28 How often does he/she talk about cervical cancer?	every day	once a week	once a month	never	
29 Where does he/she talk about cervical cancer?	Baby clinic	Diabetic clinic	OPD	Pharmacy	Other

30 Do you have IEC material about cervical cancer available for patient to access in the clinic?	Yes	No
31 Do you have posters about cervical cancer screening displayed in your clinic?	Yes	No

Thank you very much for your time. It is highly appreciated.