

ATTITUDE AND PERCEIVED BARRIERS BY EMERGENCY DEPARTMENT STAFF
TOWARDS ROUTINE HIV TESTING IN THE EMERGENCY DEPARTMENT OF
THREE ACADEMIC CENTRES.

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DECLARATION

I, Mojeed;Oluwaseyi Michael do hereby declare that this research report is my own work. This research report is being submitted in partial fulfilment for the degree of Master in Science in Medicine in Emergency Medicine to the Faculty of Health Sciences. No part of the report has ever been submitted before for any qualification, certification or publication.

I further declare that all work used from others or with the assistance of others have been acknowledged and referenced.

I further declare that this research project has been undertaken in accordance with the approval of the Human Research Ethics Committee (Medical), clearance

Certificate number: **M120607**

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Date: 19/8/2013

DEDICATION

I dedicate this report to God for his wisdom, provision and sustenance.

And to Tunde, Felicia and Elizabeth; your love is acknowledged and highly appreciated.

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ABSTRACT

Background: The South African HIV testing guideline, Center for Disease Prevention and Control (CDC), World Health Organisation (WHO), and Joint United Nations Programme on HIV/AIDS (UNSAID) have recommended that routine HIV testing be offered in every healthcare facility. The emergency department(ED) is uniquely placed to be involved in this initiative due the volumes and characteristics of patients seen in the ED. This study seeks to determine the attitude of ED staff and their perceived barriers towards routine testing in the ED.

Methods: Paper-based questionnaires were distributed to 170 members of ED staff in 3 academic hospitals. Survey Questionnaires contained 25 questions to reflect staff knowledge of HIV infection, their attitude towards testing, current testing practices and perceived barriers to testing. Chi square test was used to test for associations between various variables and the willingness to test.

Result: Response rate was 52% (88/170). Average year of experience in an ED (SD) was 4.4 years. Only 30% of ED staff favoured routine testing in the ED. However, 63% of staff was willing to test if result was available within 20 minutes. Members of ED staff generally prefer that a HIV counsellor disclose the result of a positive test. Members of the white race and those who identified fewer barriers were more likely to test. Important barriers cited include; time constraints (77%), inadequate resources (77%), and lack of support staff (71%).

Conclusion: The ED staff generally favoured risk based testing over routine testing. Members of the ED staff are generally willing to offer routine HIV testing, but the presence of barriers may limit the implementation of routine HIV testing in the ED.

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DEFINITIONS

Opt in: HIV testing is presented in such a manner that the patient understands that there will be no testing unless he or she states agreement.

Opt out: HIV testing is presented in such a manner that the patient understands that testing will be offered unless he or she declines.

Targeted testing: The selection of any patient from among a defined subpopulation based on the increased likelihood of infection when compared to the general population.

Non targeted: The selection of any patient within the available population without respect to risk, but not intended to comprehensively include every available patient.

HIV screening: Testing for reasons other than signs and symptoms possibly attributable to HIV infection.

Universal testing: The selection of all patients in the available population on a non-targeted basis and intended to include every available patient.

CHAPTER 1 Literature Review

1.1 Introduction

There have been calls for Human Immunodeficiency Virus (HIV) testing to be extended to non-traditional HIV testing centres (1). This was necessitated by the global burden of the disease and the need to scale up response to combat the epidemic (1). In 2007, the World Health Organization (WHO) and the United Nations Joint Action on HIV/ AIDS (UNAIDS), recommended that HIV testing should be offered to any patient that presents in any healthcare facility in areas with generalized HIV epidemic (1). This was not a departure from the traditional client initiated testing but was meant to complement existing testing approaches, and increase the number of people with knowledge of their HIV status, and therefore access to treatment(1).

Despite advancements in HIV prevention and treatment in the last decade, South Africa still has the largest HIV epidemic in the world with an estimated 5.24 million persons living with HIV infection in 2010 and an estimated 410,000 new cases in the same year. (2).The overall prevalence rate is 10.5% with some age groups being more affected (2). The HIV prevalence peaked in females between ages 25 – 29 at 32.7%, and for males at 25.8% between ages 30-34(3). These figures are unacceptably high and of great public health concern (4).

In response to the HIV epidemic, the government of South Africa embarked on a major HIV counselling and testing campaign (4). The target was to reduce the national HIV prevalence by 50%, and was based on the premise that identifying and keeping people without HIV infection uninfected is the most effective and sustainable intervention in

HIV/AIDS response(4). The government, thereafter, implemented a number of new components in the policy on voluntary counselling and testing (VCT).

These components included the review of counselling protocols(pre and post counselling and the use of trained counsellors), as well as the need for HIV testing to be offered by healthcare providers to any patient that present in any healthcare facility for any ailment- this is referred to as provider initiated counselling and testing(PICT) (4).

The implication of this is that any patient that presents to the emergency department(ED) for any medical treatment is to be treated as though the patient is at risk of HIV infection, and that HIV infection may be responsible for the patient's ailment. HIV counselling and testing should be offered to these patients as part of routine medical care (4).

Routine HIV testing is of crucial importance in the fight against the HIV epidemic. The knowledge of a person's HIV status could lead to potential beneficial behavioural changes that could protect others from infection, and facilitate the patient's access to treatment (1, 4) thereby, improving the quality of the life of the individual. In addition, routine HIV testing helps reduce the burden of HIV/AIDS and its overall effect on the healthcare system (1).Early identification and treatment have been identified as the most cost effective intervention in the fight against HIV/AIDS (5, 6, 7). Routine HIVtestingalso reduces the cost of treatment of the disease as patients are identified earlier and commenced on treatment, which decreases the complications associated with the disease (1, 4).

In 2006, the Centre for Disease Control and Prevention (CDC) in the United States of America (USA) proposed recommendations for routine HIV testing in all healthcare settings(8). The uniqueness of these recommendations is its identification and emphasis on the ED as an important centre for routine HIV testing and the introduction of a targeted age for which those tests are to be offered (8,9).

The burden of the disease in South Africa, the increasing rate of disease transmission and the desire of the government to curb its spread necessitates that every opportunity be taken to identify patients with HIV infection and commence early treatment(4).

Following the CDC recommendations, the numbers of EDs offering routine HIV testing in the USA increased with the greater percentage limited to the academic EDs, for reasons that will be explained in the review.

In this review of the literature, the researcher explored the background to HIV testing in the ED, with a brief historical perspective to the topic, examined what uniquely positions the EDs to take up this public health responsibility, identified modifications to HIV counselling and testing that may be required for the environment of the EDs, examines concerns with respect to the ED as a testing centre, a brief review of the ethical implications of this initiative in the ED, and lastly identified common barriers to an ED based HIV testing.

A search of the literature using PubMed, Scopus, Google, Google scholar, MD consult, and the Cochrane Library however, showed no previous studies on the practice of routine HIV testing in an ED in South Africa.

1.2 Background to HIV testing in the ED

The public health approach to emergency medicine means applying the principles of public health to clinical practice (primary prevention), public education campaign and community involvement (secondary prevention), research and surveillance (10). The ED staff more than any other health worker is more likely to witness the terrible consequences of poor public health response to a disease, as unmet public health needs will result in patients presenting to the ED for complications of, otherwise, preventable conditions or diseases(10) .

In 1986,Baker et al (first study involving HIV testing in the ED) in a study to assess the risk of transmission of HIV infection to healthcare workers in Johns Hopkins Hospital ED in the USA indicated that 3% of the critically ill patients screened for HIV infection were positive (11). This was considered a huge proportion in any patient population at that time (12).The following year, Kelen et al in a different study to define the extent of potential exposure of ED staff in a level-one trauma centre in the USA to HIV infection from patients with unrecognized HIV infection, indicated an HIV prevalence of 5.2%among the general adult population presenting to the centre (13). About 4% of the ED adult patients tested were not aware of their infection (13). Over the next decade, researchers continued to report increased prevalence of HIV amongst patients visiting the ED (14) (15) (16).

Over the next couple of years, the Society for Academic Emergency Medicine Public Health and Task Force (SAEM PHTF) developed recommendations for prevention, screening, and counselling activities to be conducted in the ED for certain conditions including HIV infection (17). Prior to these, the EDs in the USA have been involved in

some sort of preventive care services (17). A systemic review conducted by Irvin et al under the auspices of SAEM PHTF gave HIV screening in the ED an alpha rating for the prevention of morbidity and mortality associated with HIV infection through early recognition and treatment (18). Alpha rating means there is sufficient evidence to support offering of routine HIV testing in the ED setting provided sufficient resources are available (18,19).

In 2006, the CDC in an effort to end HIV/AIDS exceptionalism, published recommendations that called for non-targeted, opt out HIV testing in healthcare settings for patients between the ages of 13-64 years especially in the ED where the prevalence of HIV infection exceeds 0.1% in the general population (8). Routine HIV testing was to be offered as part of routine clinical care in the ED, irrespective of the presence of identifiable risk factors for HIV infection in the patient (8). HIV testing information, either verbal or written, would be given in such a way that the patient understood that the default was to test for HIV infection whenever a patient presented to the ED unless he or she declined (opt out) (20,21). The goals of the CDC recommendations were to diagnose HIV infections early in the course of the disease, using reliable, cost effective screening methods, as well as initiate treatment to halt the progress of the disease and the rate of transmission (21).

The World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) produced a set of new guidelines for HIV testing in 2007. One key component of the guidelines was that HIV testing should be offered to any patient that presents to any health care facility for any complaint in areas with a generalized HIV

epidemic(1). Generalized epidemic is defined as areas with HIV prevalence >1% in pregnant women (1). The WHO/UNAIDS guidelines recommended an “opt-out” approach to provider-initiated HIV testing and counselling in health facilities (1). HIV testing and counselling was to be part of the normal standard of care provided to the patient, regardless of whether the patient showed signs and symptoms of underlying HIV infection or the patient’s reason for presenting to the health facility(1).

1.3 Brief overview of routine HIV testing practices in South Africa

The guideline on HIV testing in South Africa states that any patient that presents in any healthcare facility, including the ED should be offered HIV testing (22).It is also recommended that provider initiated HIV testing be offered on an opt out basis (22).Important aspect of the South African HIV testing guideline is that the pre and post-test counselling are both mandatory (22). Routine HIV testing in South Africa is still offered on an opt in basis, in which the patient is encouraged to test but the default is not to test unless a patient accedes (22).Pre-test information session are conducted with groups of patients; this is followed by a brief individual session to address individual HIV risk. Subsequently, patients who agree to test give either verbal or written consent. Those that decline HIV testing are counselled and encouraged to test (22).

Following testing, all patients, regardless of the test result receive post -test counselling. In addition, those with positive result are given their results and counselled only after the confirmatory test is positive. They are thereafter referred for CD4 count, clinical staging, tuberculosis screening, and Pre- antiretroviral therapy management. HIV testing and counselling was to be administered by a trained healthcare professional

such as doctors and registered nurses. The implementation of the task shifting policy in the management of patients with HIV infection also means that trained health workers such as counsellors can also offer HIV testing. Currently, there is no separate guideline with respect to routine HIV testing in the ED or any practice of such to the researcher's knowledge.

1.4 ED as an HIV testing centre.

The ED have traditionally been seen as centres of acute care(23), and staffed by emergency specialists, nurses, and other medical professionals who are accustomed to patient resuscitation and stabilization, but often fail to take advantage of the opportunity to provide preventive services(10,23). The ED is often faced with the complexities of disease burden, the increasing demand for emergency care resources, and increasing financial pressure (24, 25). In spite of the above mentioned restrictions, the question remains whether the ED should be involved with the preventive measure of routine HIV testing.

In South Africa there is a paucity of studies that estimate the numbers and characteristics of patients that visit EDs. However, with the South African quadruple burden of disease, which include one of the highest rates of violence and trauma in the world(26), the huge burden of HIV/AIDS and HIV related diseases such as tuberculosis, pre-transitional illnesses (such as malnutrition and infectious disease associated with poverty and underdevelopment), and the increasing incidence of lifestyle diseases such as diabetes, cardiovascular diseases, chronic obstructive airway disease and cancers

(26,27), emergency care is an essential part of healthcare system in South Africa and the ED is key to this system.

A trauma case load survey of 213 public hospitals (secondary and tertiary) by Matzopoulos et al found that 1.5 million patients sought emergency care in the ED for non-fatal injuries (28). Matzopoulos et al, however, suggested that the national total could exceed 3 million cases. This figure represents just a group out of the quadruple burden of disease in South Africa

The ED is the only healthcare facility that is accessible at all hours of the day. The Section 27(3) of the Constitution of South Africa states that no one may be refused emergency medical treatment (29). This makes the ED the only facility that cannot reject patients irrespective of the patient's ability to pay,(30) further contributing to the increased numbers of patients seen in the ED(30) These visits provide an excellent opportunity to offer HIV testing to patients who may not previously have had an opportunity to be tested.

The ED is seen as a site of acute care and patient stabilization. The ED over the years has been involved in preventive care(17). According to Rhodes et al, emergency providers provide tetanus immunization for all patients with laceration (17). Locally, the ED reports suspected cases of child abuse and domestic violence to appropriate protective agencies, screen victims of sexual abuse for HIV infection and provide post exposure prophylaxis where necessary. In the 2006 CDC recommendations, the ED was also identified as an important site for routine HIV testing (8).

A high prevalence of HIV infection has been reported among patients presenting to the ED. Goggin et al, in a blinded seroprevalence survey to determine the rate of previously undiagnosed HIV infection among 2155 eligible patients in a level one trauma centre, identified 76(3.5%) patients with HIV infection (31). About a quarter (20%) of these patients with new HIV infection diagnosis was previously undiagnosed (31).

Waxman et al, in a feasibility study of routine opt out HIV testing in a teaching and referral hospital ED in Western Kenya demonstrated HIV infection in 312(23 %) patients out of the 1339 patients tested in the ED (32). Sixty nine (22%) of these patients were ambulatory patients, who otherwise would have been treated and discharged without knowing their HIV status (32). According to the research protocol, all medical patients presenting to the ED, irrespective of age, were eligible for this study. Initial testing were based on doctor's referral as only one counsellor was available (32). An important limitation to this study was that testing was based on doctor's referral in the initial stages of the study (32). This may have led to a result bias as the reason for referral might have been based on the suspicion of HIV infection in the first place.

Nkanjako et al, in a study to assess the level of patient acceptance of routine opt out HIV testing in the ED of a referral hospital in Uganda, found that 86 (43%) of 198 ED patients screened tested positive for HIV infection (33). Eighty (93%) of the patients who tested positive were previously undiagnosed (33). This study may have been limited by the small sample size, and the fact that every sixth patient in the register was recruited for the study. This could have resulted in a selection bias, as those sampled could have been the ones with HIV infection. Irrespective of these limitations, these studies highlights the potential role of the ED in identifying new cases of HIV infection.

While patients may present to the ED for a variety of conditions, these visits present an ideal opportunity to offer HIV testing (33). The ED has been implicated as one of the most common health care sites where the opportunity to detect HIV infection is missed. (34, 35, 36), thereby missing a great opportunity to contribute to combating the HIV epidemic.

The ED is the gate keeper into the broader healthcare system, serving as an interface between the community and the healthcare system (17). In developing countries, most patients do not have access to routine healthcare (37) and may only seek medical attention in hospitals after patronizing alternative healers, if self-medication fails or when the disease reaches a crisis level (32). To these patients, a visit to the ED for these health conditions may be the only interaction with the healthcare system. The ED also attends to victims of sexual abuse, drug misuse and complications of alcohol excess. It may be the only source of medical attention for the vulnerable groups in society including the homeless and the indigent people (17, 23).

Offering HIV testing in the ED is also known to have produced a higher yield of HIV positive results than self referral testing centres in the USA, in which routine testing has been successfully implemented (38). This may be as a result of the fact that offering HIV testing to all patients that present to the ED allows for the identification of more undiagnosed HIV infection as opposed to the targeted screening in the self referral centres.

The ED is an ideal environment for the detection of HIV infection (10). The widespread distribution of the ED, the availability of ED services irrespective of the time of day (30), the perception that the ED offer better quality of care (30), and the limited access and utilization of primary care services by the public (39,40) makes the ED a fertile ground for the testing of high volumes of the diverse population(41). In a retrospective study of patients presenting to a secondary level ED in Cape Town, Hanewinckel et al, found that 88.2% of the 2134 analysed patients were self-referred (39). A majority (81.8%) of the self-referred patients were triaged into yellow or green, and could have been managed at the primary care level (39).

Similar findings were reported by Wallis in a study of the work load and case mix in the EDs of 9 secondary level facilities (42). A majority (74%) of patients were self-referred, with peaks of attendance on weekends and outside of normal working hours (42).

Therefore, the ED is well placed to offer HIV testing to these patients who otherwise may not have had the opportunity to be tested. In addition, the calm disposition of the patients presenting to the ED may make the impact of testing and counselling by the ED staff more productive as patients may be more receptive to counselling during these visits to the ED (10,17,23).

Monitoring of the trend of a disease and knowledge of factors associated with the disease are crucial to the planning of strategies to control the disease. The monitoring of changes in the rate of new HIV infections is extremely important to understanding the HIV transmission dynamics (43). The large volume of patients seen by the ED may present an opportunity to gather reliable data for the national surveillance of the HIV epidemic (44). Therefore the data obtained through routine testing for HIV infection in

the ED can be used to monitor the effectiveness of the various interventions to the disease.

Implementation of routine HIV testing in the ED may contribute to effectively ending HIV infection exceptionalism (43,45). By incorporating routine HIV testing into routine emergency care, there is the tendency to reduce the stigma associated with the disease as patients, members of staff, and the general public begin to understand that HIV infection will be treated just as any other disease. HIV testing in the ED creates an opportunity to increase the public health awareness and the benefits of knowing one's status (30). It will also increase the opportunity for infected patients to obtain treatment and avert morbidity and mortality associated with the disease (44)

1.5 Feasibility of HIV testing in the ED.

A number of preventive initiatives such as health promotion, domestic violence and alcohol screening have been successfully implemented in the ED in the USA, despite the barriers associated with these initiatives (23, 46, 47, 48, 49). In addition, routine HIV testing has been implemented in healthcare settings where routine HIV testing is not traditionally offered, with vary degrees of success, as well as increased uptake of test and higher yield of positive result (50, 51, 52).

The components of the CDC recommendations were designed to facilitate HIV testing as well as increase the uptake of HIV testing (8), and may particularly be relevant in the fast paced environment of the ED. These components include: introduction of opt out testing, non-targeted screening, reduced emphasis on time consuming preventive

counselling during testing, and the integration of HIV testing consent into the general medical consent (8, 53). Routine HIV testing has been implemented in some EDs in the USA (12). This is still limited to EDs in academic centres as these academic centres were the origins of research into ED based HIV testing, and they are able to secure funds to execute this initiative (12)

Routine HIV testing has been demonstrated to be cost effective, especially in the identification of new cases of infection and the prevention of complications associated with the disease (6, 7, 18). The introduction of rapid HIV test kits that require minimum laboratory expertise provides same day preliminary results (54, 55). This results in the improvement of the uptake of HIV testing and also ensures that routine HIV testing can be easily incorporated into the standard emergency care of these patients (8, 54, 55). The same day notification of result may also facilitate patient's entry into HIV care (54).

The feasibility of routine HIV testing in the ED has been demonstrated in several studies, including studies from low resource, high prevalence countries such as Kenya and Uganda (32,33, 53). In one of the feasibility studies following the 2006 CDC recommendations, Brown et al demonstrated the feasibility of offering routine HIV testing to general ED patients between the ages of 13to 64 years in a high volume ED in a high HIV prevalence area over a period of 3 months (53).

Testing was offered on an opt out basis, and as part of routine care for these patients by undergraduate medical students. While the acceptance rate was 60% it was also demonstrated that none of these patients would have requested for HIV test if they had not been offered testing by the ED staff (53). However, about 50% of the patients with

preliminary positive results were lost to follow up as confirmatory test were either offered at a later date or at the patient's discretion (53).

Waxman et al and Nakanjako et al both demonstrated the feasibility of routine HIV testing in an ED in Sub Saharan Africa with a patient acceptance of 97.7% and 95% respectively (32,33). These studies have both demonstrated that routine HIV testing in the ED is feasible and an effective strategy in identifying previously undiagnosed HIV infection high prevalence, resource limited settings.

In the South African context, in which preventive counselling and a separate consent are mandatory for HIV testing (22), an alternative approach is the opt in HIV testing. Merchant et al demonstrated the feasibility of opt in HIV testing in an Urban ED in the USA (56). Testing was offered by certified HIV counsellors to a random sample of patients between the ages of 18 to 55 years. Preventive counselling was offered by either video or individual discussion. The acceptance rate was 39.3 % (56).

Kierzek et al also demonstrated the feasibility of an opt in routine HIV testing in the ED of an urban hospital in Paris, France (57). Testing was offered to every adult patient that presented to the ED by the ED staff. Only about 0.18% of the 1118 patients accepted to be tested (57). While both studies have demonstrated the feasibility of an opt in routine HIV testing in the ED, they tend to have lower acceptance rates than studies involving the opt out approach (58).

1.6 Ethics of HIV testing and the ED

An important aspect of HIV testing is the ethical principles governing counselling and testing. The South African national HIV testing guideline states that “HIV testing must be ethical, promote and protect human rights, be conducted within a supportive environment and performed where there is an adequate healthcare infrastructure”(22). The core ethical principles highlighted by the South African testing guideline includes; informed consent, counselling, confidentiality and privacy(22).Concerns have also been raised with respect to patient autonomy, confidentiality and the appropriateness of the ED as a testing centre(45,59). Opponents of routine HIV testing in the ED fear that removing the need for informed consent in opt out testing effectively makes HIV testing compulsory, infringing on the patients right of autonomy(59).

However, current testing guidelines, CDC or South African testing guidelines, do not obviate the need for informed consent (8,22). Consent is incorporated into the general medical consent to conserve time, as well as also put an end to HIV exceptionalism by treating HIV testing like other tests offered in the ED (59).According to Bogaert, the opt out approach respects the patient’s right to decline testing, and the need for counselling services (60).Opt out approach protects patients’ rights as well as foster public good (61). The final decision to test still lies with the patient (60, 61).Concerning the appropriateness of ED as an HIV testing centre and the fears that testing for HIV in the ED diverts resources for emergencies into public health programs (59),the ED is the only source of healthcare for the most vulnerable populations (17,23, 30)and these population deserve a right to healthcare including HIV testing. It will therefore be

unethical not to offer testing to these patients who might depart the ED without knowing their status. These patients may even assume that they have been tested (59).

1.7 Barriers to routine HIV testing in the ED

The introduction of preventive services into the scope of operation of the ED has always been met by interest and controversies in the emergency medicine community (62). While studies have demonstrated the feasibility of routine HIV testing in the ED (32, 33, 53), barriers to implementation of this initiative in the ED may be responsible for the slow adoption of the initiative by various EDs (63). To the best of the researcher's knowledge, HIV testing is not routinely offered in EDs in South Africa.

Fincher-Mergi et al, in a survey of 154 ED staff (doctors, physician assistants and registered nurses) of 10 EDs in the USA, demonstrated that only 10% of the emergency staff "always" encouraged HIV testing within the ED for patients with suspected sexually transmitted infections (STI) (64). When providers were divided into provider groups, advanced group (doctors, physician assistants and nurses practitioners) and registered nurses, there was no significant difference in the reported frequency of encouraging HIV testing in the ED between the 2 groups. More than half of the respondents (51%) identified concerns for follow up as a barrier to offering HIV testing; knowledge of counselling (45%) was also cited as an important barrier to testing (64). This study had limitations in that the survey instrument was not validated, and the registered nurses in the study EDs were not allowed to order HIV testing for suspected STI patients (64).

This may have influenced the way in which the survey was completed, resulting in a response bias (64).

Bernstein et al in a cross sectional survey of the attitudes and practices of 3995 US physicians to routine HIV testing found that doctors practicing emergency medicine were less likely to offer HIV screening to their patients(65). One limitation to this study was that of response bias. Doctors who did not respond to the survey may be more or less likely to screen (65). In addition, the study did not attempt to identify the reasons for not screening. These studies pre date the current CDC recommendations and may not necessarily reflect current HIV testing practices in the EDs.

In a 2009 cross national web-based survey of 338 EDs, comprising of academic, community and EDs of teaching hospitals in the USA conducted by Rothman et al, only 75 (22.2%) of the EDs reported having a systematic HIV testing programme (HIV testing programme of any form organized at the departmental level), 65.3% of EDs with systematic testing programmes were academic EDs, 85.3% were located in urban areas, and 79.4% were public EDs(66). Only 73 (21.6%) of the 338 EDs offer non targeted HIV screening (66). One limitation of this study was the method used in the recruitment of the EDs. Close to half (43.2%) of the EDs surveyed were either represented at the National ED HIV testing consortium or the CDC strategic workshop predisposing the study to a response bias, as there may have been an oversampling of EDs that support HIV testing (66). The majority of the respondents were nursing professionals who may not have as much knowledge regarding HIV testing programmes in their EDs (66). Finally, the survey instrument was not validated. These figures

demonstrate a possible increase in EDs offering HIV testing (66) since the of the 2006 CDC recommendations.

In a pilot study to determine the feasibility of an HIV screening programme in an urban academic ED in the USA (67), Mummo identified barriers which he divided into broad based categories such as departmental, institutional, legal, infrastructural, and public health barriers (67). Routine HIV testing were offered by 2 research assistants to 395 ED patients between the ages 18 to 64 years. Some of the barriers such as public health and institutional barriers may not necessarily apply to areas with high HIV prevalence (67), as these areas are most likely to have a public health initiative and an institutional guideline for testing. For the purpose of this current study, barriers to HIV testing in the ED were divided into 3 categories:

- I. Departmental barriers; those related to the intrinsic nature of the ED working environment and the operations of routine testing. Examples include, overcrowding, ED patient flow, resources, lack of testing guidelines and administrative support,
- II. Provider barrier; those related to ED staff attitude towards testing. Examples include; requirements for informed consent, knowledge about counselling, discomfort with the disclosure of positive result, and the knowledge of the legal requirements for testing.
- III. Patient barrier; those arising from patient. Examples are language barrier, privacy and confidentiality, patient's acute conditions, fears of stigmatization from the ED staff and poor perception of risk for HIV infection.

Different studies have identified various barriers to the implementation of a routine HIV testing initiative in the ED. Some of the barriers are not limited to the ED, but are also reported in a similar initiative in other non-traditional HIV testing centres such as STI clinics, and antenatal clinics (68)

A systematic review by Burke et al to determine the barriers to HIV testing by USA doctors in the ED, antenatal clinics and other health settings (STI clinics), identified 3 studies specific to the ED (68). One of the studies was a review article by Rothman discussing the feasibility of HIV counselling, testing and referral in the ED (34), the other was a survey by Fincher-Mergi et al to determine barriers to HIV testing in the ED (64). In the third article, Hardwicke presented in a conference article, a list of barriers to HIV testing cited by ED staff (69). Patient follow up, concern for patient confidentiality and lack of time were identified in the 3 studies, while language barrier, cultural barrier and requirements for pre-test counselling were cited in 2 of the studies (68). Other barriers identified in the ED in this review included; competing priorities for ED resources, lack of HIV testing and counselling knowledge, lack of patient acceptance, disclosure of test result and lack of testing guidelines in the ED (68). Some of these barriers such as time, consent process, language barriers, pre-test counselling and, lack of HIV counselling and testing training were also universal to the other practice settings examined in this review (68). An important limitation to this review was the dearth of literature with respect to the study of barriers to HIV testing in the ED, which necessitated the inclusion of various studies irrespective of the quality of the study (68). Another limitation is the lack of clear description of how barriers were confirmed in some of the studies (68).

Hecht et al, in a descriptive study to compare the attitude of 457 ED patients between the ages of 18 to 65 years, and 85 ED staff of 2 teaching hospitals in the USA to ED based HIV testing, found that only 30% of the surveyed ED staff agreed to routine testing for HIV in the ED (70). A majority(60%) of the ED staff cited requirements for counselling as the most important barrier to offering HIV testing (70).Other barriers cited include; patient surge to the ED, privacy and confidentiality and concerns about linkage to care(70). The limitation of this study was the convenience sample of respondents surveyed. The sample of ED staff selected may be those who do not favour testing in the ED resulting in a selection bias. Result of the comparison of the 2 groups needs to be interpreted with caution due the huge difference in the sample sizes between the groups (70).

The Universal Screening for HIV infection in the Emergency Room (USHER) trials was a prospective clinical trial by Arbelaez et al to examine ED providers' attitudes and perceived barriers to routine HIV testing in a level one trauma centre in the USA (63). This study surveyed 108 full time ED providers comprising of the physician group (residents, attending physicians and physician assistants) and the staff group (nurses, emergency service assistants) at 2 time points, six months apart, using the same survey instrument (63). More than half of the ED providers (55%) favoured routine testing in the ED. Lack of resources (60%) and inadequate time (62%) were identified as the most important barriers to routine HIV testing in the ED six months after the initiation of the clinical trial (63).ED provider support for testing and frequency of reported barriers were similar in the physician and staff group. Other barriers identified in the USHER trial include; lack of follow up care and lack of legal understanding of laws involving informed

consent (63). These barriers are not unique to routine HIV testing programme in the ED. They have been identified in other preventive initiatives implemented in the ED such as alcohol screening and domestic violence (46, 48, 49)

In an expert opinion study by Kecojevic et al, the opinions of 98 health professionals already involved in either the planning or implementation of an ED based HIV testing in 42 EDs in the USA were examined. The SWOT (strength, weakness, opportunities, threats analysis) analytic tool was used to assess the impact of ED HIV testing on public health (44). Time constraint (23.2%) and resources (23.2%) were the most frequently identified barriers, 16.3% and 13% of the participants cited linkage to care and lack of confidentiality as barriers to testing in the ED respectively (44). Limitations to this study are derived in the instruments used in the study. SWOT analysis is a subjective tool that measures perceived as opposed to quantifiable factors (44). As a result, some of the opinions might be biased. Patients were not represented in this study, and this may not represent the true opinions of the patients (44). Participants in the study are health professionals already involved in ED based HIV testing implementation in various capacities and may have been biased in their opinions (44).

Al Mohajer et al, in a cross sectional web based survey of 232 residents and attending physicians in internal medicine and emergency medicine in an academic ED in the USA found that emergency medicine residents were more likely to offer testing compared to internal medicine residents (60.7% versus 27.8%)(71). There was a tendency towards targeted testing as most respondents were more likely to offer testing to men who sleep with men (97.7%) and patients with a history of STIs (94.2%). Respondents cited time (37.6%), need for written consent (23%), pre-test counselling (17.3%) as important

barriers to testing (71). Limitations to this study include the failure to classify barriers between emergency medicine physician and the internal medicine physicians. Another limitation is that the study ED implements a long standing targeted HIV counselling and testing policy which could have influenced the survey response, resulting in response bias (71). Analysis was performed using data from a survey instrument that was not validated.

1.8 Conclusion

In conclusion, the high burden of HIV infection, the increased morbidity and mortality, the increased risk of further transmission of the disease associated with late diagnosis means that any contact a patient has with the healthcare system should serve as an opportunity to offer HIV testing (26). The EDs are an integral part of the South African healthcare system and are also at the fore front of the treatment of late testers who present with HIV related illnesses. An in-depth understanding of ED staff disposition towards routine HIV testing and the perceived barriers in the ED is imperative if routine HIV testing as recommended in the South African HIV testing strategy is to be incorporated into standard emergency care.

CHAPTER 2 Research method

2.1 Introduction

This chapter describes the detailed methodology undertaken in developing the questionnaire, the ethical considerations that were involved in the study, a description of the study locations and the study population including inclusion criteria, and the methodology of data analysis.

2.2 Aims and Objectives

AIM: To assess the attitudes and perceived barriers by ED staff of the Charlotte Maxeke Johannesburg Academic, Chris Hani Baragwanath Academic, and Helen Joseph Hospitals to routine HIV testing in the ED.

OBJECTIVES:

1. To describe the demographic data of medical and nursing staff employed in the EDs of the Charlotte Maxeke Johannesburg Academic, Chris Hani Baragwanath Academic, and Helen Joseph Hospitals.
2. To determine the attitude of ED medical and nursing staff to the implementation of routine HIV testing in their ED.
3. To determine what perceived barriers may exist amongst ED medical and nursing staff to implementing routine HIV testing in their ED.
4. To identify the factors that influence the attitude of ED medical and nursing staff to the implementation of routine HIV testing in the ED.

2.3 Study design

This study was a descriptive knowledge, attitude and practices study using a survey design with a questionnaire. The study was carried out in the EDs of the Charlotte Maxeke Johannesburg Academic, Chris Hani Baragwanath Academic, and Helen Joseph Hospitals. Data was collected over one month.

2.4 Study sites

The three study sites are academic hospitals under the Gauteng Department of Health and Social Development.

Charlotte Maxeke Johannesburg Academic Hospital is a quaternary medical institution in Parktown, Johannesburg with a designated medical, surgical and paediatrics emergency departments. It is also a Level One Trauma Centre. It is staffed by emergency physicians, trauma surgeons, registrars, medical officers, interns, professional nurses, staff nurses, and assistant nurses. It is a busy centre with an average annual patient visit to the ED of about 50000. It is affiliated to the medical school of the University of the Witwatersrand medical school.

Chris Hani Baragwanath Academic Hospital is a quaternary medical institution in the Soweto area of Johannesburg, with designated medical, surgical and paediatrics emergency department. It is also a Level One Trauma Centre. It is staffed by emergency physicians, trauma surgeons, registrars, medical officers, interns, professional nurses, staff nurses, and assistant nurses. It is a busy centre with an average annual patient visit to the ED of about 65000. It is affiliated to the medical school of the University of the Witwatersrand.

Helen Joseph hospital is a tertiary teaching hospital in the Westdene area of Johannesburg with a combined emergency department. It is staffed by emergency physicians, the general surgeon, registrars, medical officers, interns, professional nurses, staff nurses, and assistant nurses. It is a busy centre with an average annual patient visit to the ED of about 60000. It is affiliated to the medical school of the University of the Witwatersrand.

2.5 Sample population

The study population was the medical and nursing staff of the ED. The inclusion criteria were medical and nursing staff that must have been working in an ED for at least 3 months.

2.6 Research instrument

Data was collected by the use of a paper based self-administered questionnaire. The questionnaire was an adaptation of those used in 2 different studies in the USA.

“Emergency provider attitude and barriers to universal HIV testing in the emergency department” by Arbalaez et al (63), and “A comparison of patient and staff attitudes about emergency department–based HIV testing in 2 urban hospitals” by Hecht et al (70). These two surveys were combined and adapted for the study to suit the study locations. Adjustments made to the 2 surveys included: adding the ED setting, adding highest educational level, listing the test kits recommended in the South African HIV testing guideline, questions on history of needle stick injury, relative diagnosed with or who died of HIV/AIDS.

The questionnaire covered the following areas:

1. Demographics: race, gender, experience in an ED, professional title, highest educational qualification, ED.
2. Knowledge of HIV infection.
3. Attitudes and perceived barriers to routine HIV testing.
4. Factors that may be responsible for the attitude towards routine HIV testing in the ED.

2.7 Study procedure

The medical and nursing duty rosters for the 3 EDs were studied. The researcher went to the 3 EDs in turn as permissions to conduct research in the various hospitals were given at the different times due to the various approval processes. The researcher spent a week in each ED to cover the various shifts. Questionnaires were distributed mainly in the mornings and the afternoons. In Charlotte Maxeke Johannesburg Academic Hospital, questionnaires were also distributed in the night due to its proximity to the researcher's base. The researcher approached each individual member of the staff who was either free or not actively involved with patient care. ED staff were also approached in their free time. The researcher explained the study to each member of the ED approached. When an individual agreed to partake in the study, he/she was given a questionnaire enclosed in an envelope. Participants were asked to complete the questionnaire at a time they found convenient. On a few occasions when a participant was too busy, questionnaires were dropped either in the doctor's pigeonhole or the nurse's workstation with the participant's knowledge and permission. In order to ensure that the different shifts were sampled, the researcher ensured that data was collected

on the first day a particular shift returned from the night shifts or off. Participants were instructed to place the completed questionnaires in the envelope, and drop them in a sealed box placed in the reception or nursing station of the various EDs.

2.8 Statistical analysis

The data from the survey was stored into Microsoft Excel 2007™, following which it was exported into STAT™ (version 10) for analysis. The statistician was consulted to clarify the best way to capture and analyse data

For the first objective, descriptive analysis using mean and standard deviation was used for the numerical data, while the categorical data such as gender and professional qualification were expressed in frequencies and percentages.

For the second objective, responses were categorized into “those willing to test” and “those not willing to test”. Results were represented in proportions and percentages.

For the third objective, the Likert scale was collapsed into “agree” and “disagree” to facilitate data analysis and barriers represented as frequencies and percentages.

For the fourth objective, a bivariate analysis was used to determine factors that are independently associated with the outcome variable. Chi square was calculated. Also Fischer’s exact test was done when frequency was less than 5. A p value of less than 0.05 was deemed significant.

Results were also presented in tables and bar charts.

2.9 Duration of study

Study was conducted over the period of one month. Data was collected between September and October 2012.

2.10 Ethics

Permission to embark on this study was granted by the postgraduate Emergency Medicine Protocol Assessor Committee of the Faculty of Health Sciences of the University of the Witwatersrand and the Human Research Ethics Committee (Medical), University of the Witwatersrand, Johannesburg.

The Human Research Ethics Committee (Medical), clearance Certificate number: M120607.

Authorization to undertake the study in the various emergency departments was also obtained from the Chief Executive Officer of Charlotte Maxeke Johannesburg Academic Hospital, the Medical Advisory Committee of Chris Hani Baragwanath Academic Hospital, and the Chief Executive Officer of Helen Joseph Hospital following which permission was obtained from the heads of the various emergency departments and the nursing managers.

The medical and nursing staff of the various emergency departments who agreed to participate in the study had the study explained to them by the researcher, following which a copy of the information sheet and questionnaire was made available to them. The information sheet was attached to the envelope containing the questionnaire. The information sheet contained a detailed explanation of the study and the procedures. The information sheet also contained the contacts of the researcher as well as that of the

Human Research Ethics Committee. Each questionnaire was enclosed in an envelope and opening of the envelope implied consent.

Confidentiality was maintained as the names of participants were not required, so data could not be traced back to the individual. In addition, each questionnaire was enclosed in an envelope before and after completion. Access to collected data was only granted to the statistician.

2.11 Summary

This chapter described the methodology involved in designing of the study questionnaire, provides a description of the study population as well as the study locations, re-counts the ethical considerations involved in the study. The method of data analysis regarding this study was also enumerated.

CHAPTER 3 Results

3.1 Introduction

This chapter seeks to describe the results obtained from the participants who completed the study questionnaire. The participants were grouped according to professional title; into doctors and nurses. This chapter will also describe the demographic characteristics of the study participants. Questions in the study questionnaire reflects participant's knowledge of current South African HIV testing guidelines, current CDC recommendations on HIV testing in the ED, participants attitude to routine testing in the ED, current HIV testing practices, the perceived barriers to routine HIV testing in EDs, and factors that may influence ED staff attitude to routine HIV testing in the ED.

3.2 Interpretation of the study survey

ED staff knowledge of current South African HIV testing guideline was assessed by asking staff to estimate the official prevalence of HIV infection, in percentage, in the general population in South Africa. They were also asked in which facilities (according to the South African HIV guideline) routine HIV testing is recommended. Lastly they were asked the correct test kit used in HIV screening in the Gauteng Province. The percentage of the correct answers was reported.

ED staff attitude towards testing was assessed by asking how often they offered routine HIV testing in the ED and, if they favoured routine testing in the general population or ED based routine HIV testing. They were also asked what category of patients they believed should be routinely tested for HIV infection in the ED and their answers divided

into those favouring routine testing and those favouring risk based (targeted) testing. There was no provision in the study questionnaire for members of staff who do not favour any form of HIV testing in the ED to allow researcher categorize respondents based on their ED based HIV testing preference, and also to enable researcher compare result with a similar study done in the USA. In addition, the ED is already involved in some provider initiated counseling and testing of HIV of some sort for example the victims of sexual abuse.

The willingness to test was assessed by asking staff if they would test if results were available within 20 minutes. The researcher specifically chose 20 minutes to enable him compare the response with that of a similar study conducted in the USA. Those who chose 'most of the time' or 'all of the time' were deemed likely to test. They were also asked who they believed should disclose an HIV positive result. The percentage of the response is given.

3.3 Demographics of ED staff

Among the 170 eligible, according to the inclusion criteria, and willing respondents, 88 respondents completed the study questionnaire within the study period of a month. Two respondents filled in both genders and more than one racial affiliation rendering the two questionnaires invalid. This yields a final study sample of 86 respondents.

Average year of experience of participants in an ED was 4.4 years. Forty nine (57%) of the 86 respondents were doctors and 37(43%) were nurses. Sixty (70%) of the respondents were females; 56(65%) of the respondents were blacks, 18(21%) were whites. Thirty-five (71%) doctors filled in graduate qualification as the highest

educational level, while 12(32.4%) of nurses filled in graduate qualification as the highest educational level. Thirty-One (36%) respondents worked in a combined ED. A larger percentage of ED staff 58(67%) had only worked in an ED for 4 years or less (Table 3.1).

Table 3.1: Demographic characteristics of ED staff involved in the study

Characteristics	Doctors (n=49) n(%)	Nurses (n=37) n(%)	Total (n=86) n(%)
Sex			
Female	29(59)	31(84)	60(70)
Male	20(41)	6(16)	26(30)
Race			
Black	22(45)	34(92)	56(65)
White	16(33)	2(5)	18(21)
Coloured	2(4)	0(0)	2(2)
Indian/Asian	9(18)	1(3)	10(12)
ED unit			
Combined	20(41)	11(30)	31(36)
Medicine	18(37)	11(30)	29(34)
Trauma	11(22)	15(40)	26(30)
Experience in an ED(years)			
1 - 4	36(73.5)	22(59.5)	58(67%)
5 - 8	8(16.3)	8(21.6)	16(19%)
9 - 12	3(6.1)	2(5.4)	5(5.8%)
13 – 16	1(2)	3(8.1)	4(4.7%)
17 – 20	1(2)	2(5.4)	3(3.5%)
n: Frequency ED: Emergency Department %: percentage			

3.4 Knowledge of South African HIV testing guideline.

Table 3.2 summarizes staff knowledge of the South African HIV testing guidelines. The table stratifies the result by provider category.

Only 8 respondents correctly estimated the prevalence of HIV infection (11%-20%) in the general population of South Africa (9%; n= 86). These 8 respondents were all doctors. This might be as a result of staff lack of confidence in the official value causing them to speculate as opposed to stating the official figure.

The South African HIV testing guideline recommends that “first response” be the rapid HIV test kit in Gauteng province. Less than one-fifth of the staff (15%; n=85) knew the correct test kit used in screening for HIV infection in the Gauteng Province, with doctors making only 38% of respondents that got the correct kit .

Though there is no official figure for the prevalence of HIV in an ED in South Africa to the researcher’s knowledge, the researcher asked members of the ED staff to estimate the prevalence of HIV infection in their ED. ED staff estimated prevalence of HIV infection in their ED (SD) was 62.3% (SD 19.8; n=47). There was no difference in the mean HIV prevalence in the ED between doctors and nurses.

Lastly, the South African HIV testing guideline recommends that routine HIV testing be offered in all healthcare facilities. Respondents that chose “all healthcare facilities” were noted as correct. Only 28 respondents (33%; n=86) gave the correct answer to the facilities in which routine HIV testing is recommended as stated in the South African HIV testing. Doctors account for 46% of respondents that got the correct facility (Table 3.2).

Table 3.2: Knowledge of HIV infection amongst ED staff

Knowledge		Doctors	Nurses	Total
	n	n(%)	n(%)	n(%)
Prevalence of HIV infection in South Africa(11-20%).	86	8(100)	0(0)	8(9)
Test kit used in screening for HIV in Gauteng Province.	85	5(38)	8(62)	13(15)
Facilities in which routine HIV testing is recommended (all healthcare facilities).	86	13(46)	15(54)	28(33)

HIV: Human Immunodeficiency Virus; ED : Emergency department; n : Frequency

%. Percentage.

3.5 Attitude towards testing

More than half of staff (51% n=82) surveyed currently rarely test for HIV in the ED.

(Table 3.3)

ED staff favoured routine testing in the general population as opposed to an ED based routine HIV testing(everyone in South Africa 48% versus all ED patients 30%)(figure 3.1). They also favoured risk based testing over routine HIV testing in the ED (intravenous drug users 44%, versus men who have sex with men 37%, versus sexually active patients 52%, versus all ED patients 30%) (figure 3.1). However, despite the

preference for risk based testing, 63% of ED staff indicated their willingness to offer routine HIV test in the ED(most of the time and all the time) if results of test were available within 20 minutes(Table 3.4). One the respondents would never offer routine test in the ED even if result was available within 20 minutes.

There was a significant increase in the willingness of both the doctors and nurses to test if results were available within 20 minutes. When asked who should disclose positive HIV results, ED staff identified different professionals from the options in the questionnaire. However, the general consensus was that the HIV counselor (84%) should disclose a positive result (figure 3.2).

Thirty percent of ED staff felt the ED should not be burdened with public health issues, while 58 % would not offer test because of time constraints.21% of ED staff were concerned that patients will come to the ED just to be tested for HIV infection. (figure 3.3).

Table 3.3: Frequency with which ED staff currently offer HIV testing in the ED compared to colleagues

Frequency	Overall	Doctors	Nurses
	n(%)	n(%)	n(%)
Much more	12(15)	8(16)	4(12)
About same	22(27)	17(35)	5(15)
Much less	6(7)	5(10)	1(3)
rarely	42(51)	19(39)	23(70)

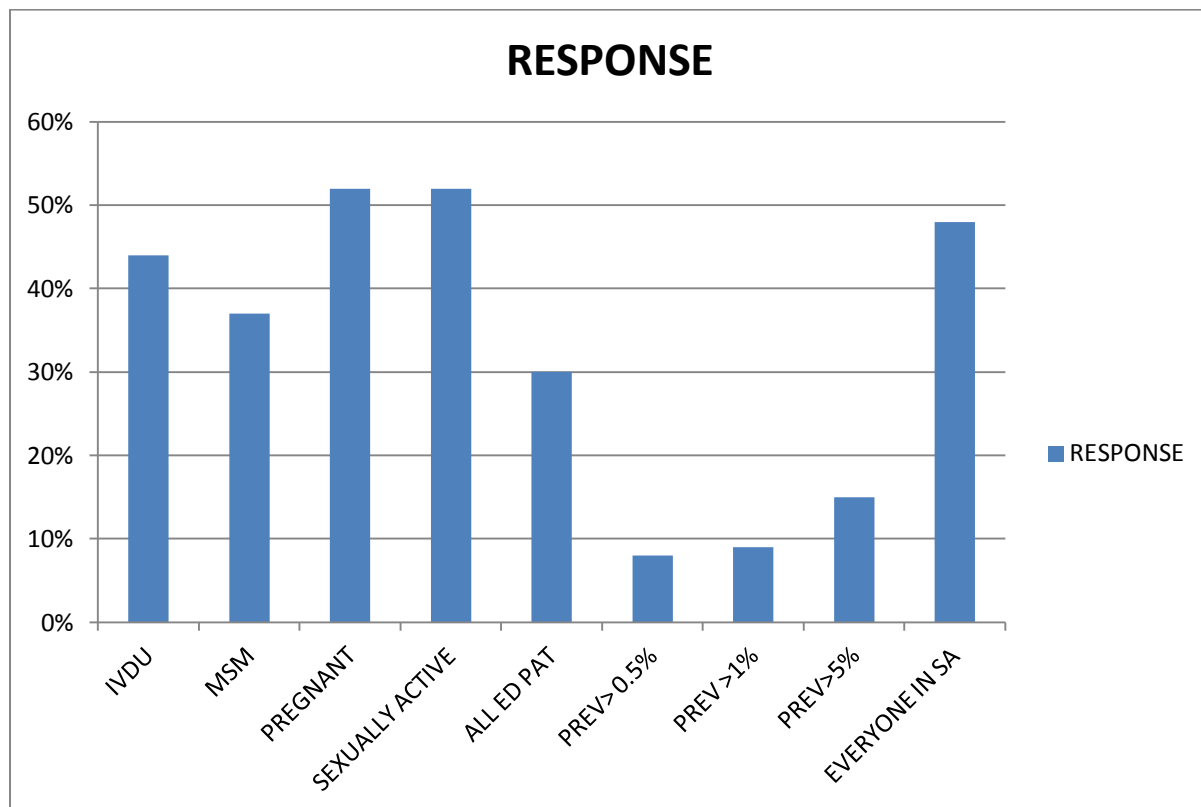
ED: Emergency department; n: Frequency;%: Percentage

Table 3.4: ED staff likelihood to offer a routine HIV testing in the ED if result of test was available within 20 minute

Likelihood to test	Overall(n=85)	Doctors(n=48)	Nurses(n=37)
	n(%)	n(%)	n(%)
Rarely	15(18)	7(14)	8(21.6)
Occasionally	16(19)	8(17)	8(21.6)
All the time	19(22)	11(23)	8(21.6)
Most of the time	35(41)	22(46)	13(35.1)

ED: Emergency Department; n: Frequency ; %:Percentage

Figure 3.1: Graph of groups of patients who ED staff believe that HIV testing should be offered



IVDU: Intravenous drug users; MSM : Men who have sex with Men; ED: Emergency department; SA: South Africa; Pregnant: Pregnant women; PAT: Patients; Prev: Prevalence

Figure 3.2: ED staff choice of who should disclose a positive HIV test result.

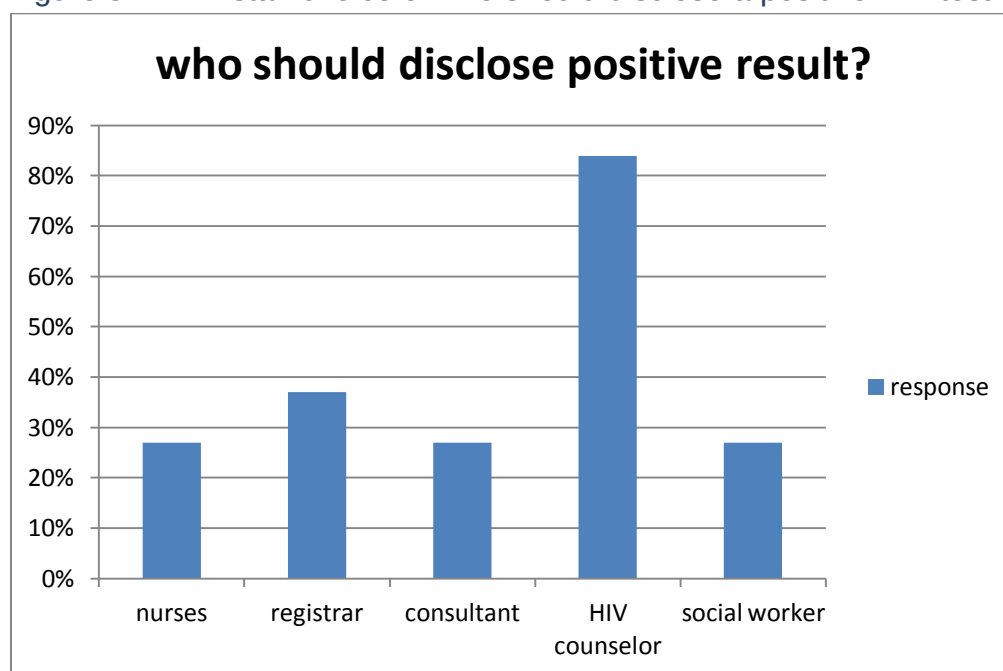
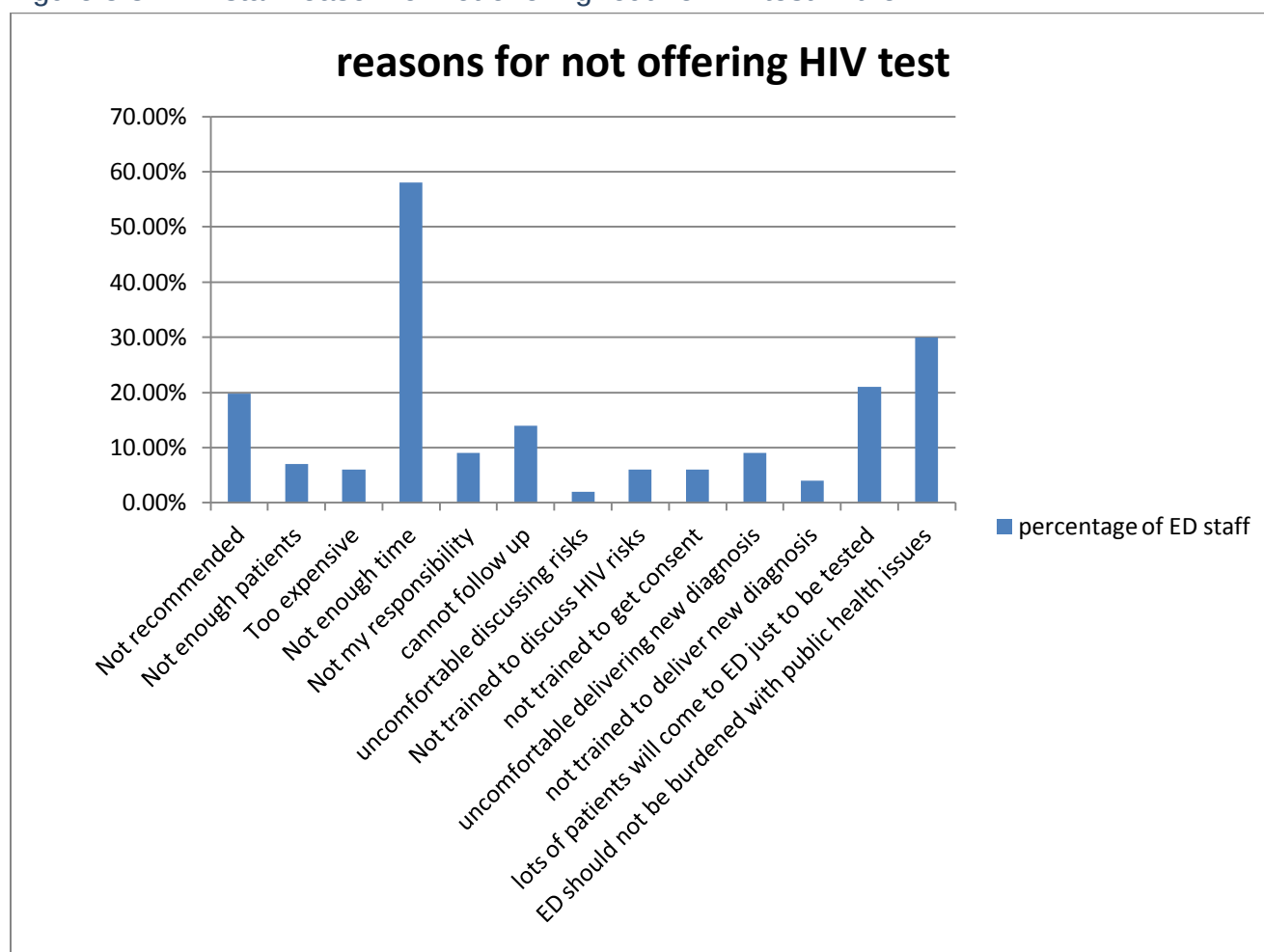


Figure 3.3: ED staff reason for not offering routine HIV test in the ED.



3.6 Perceived barriers to routine HIV testing in the ED.

The frequency of identified barriers to routine HIV testing in the ED is presented in Figure 3.4. The most frequently stated barriers to routine HIV testing in the ED were time (77%), inadequate resources (77%), and lack of support staff (71%). Sixty seven percent disagree there is no barrier to testing in the ED. When stratified by ED staff role, most cited barriers by nurses were poor knowledge of counselling (89%) and the delivery of test result (Figure 3.5).

Figure 3.4: Graph of overall perceived barriers to routine HIV testing in the ED

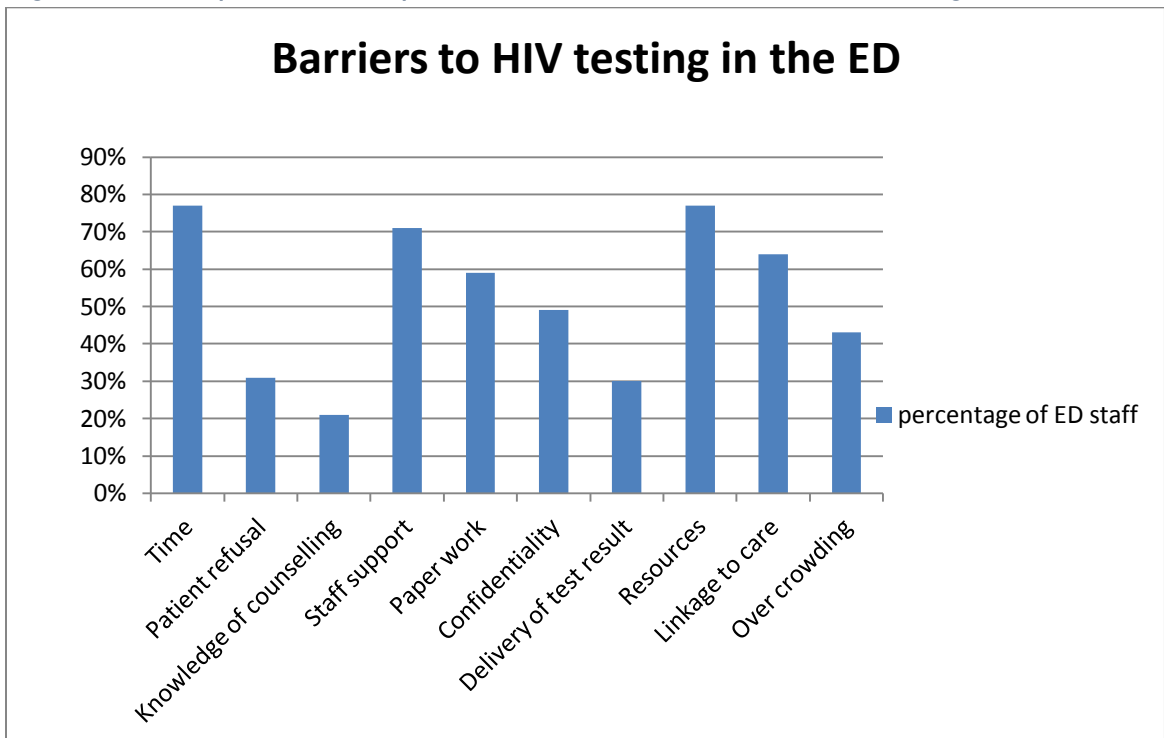
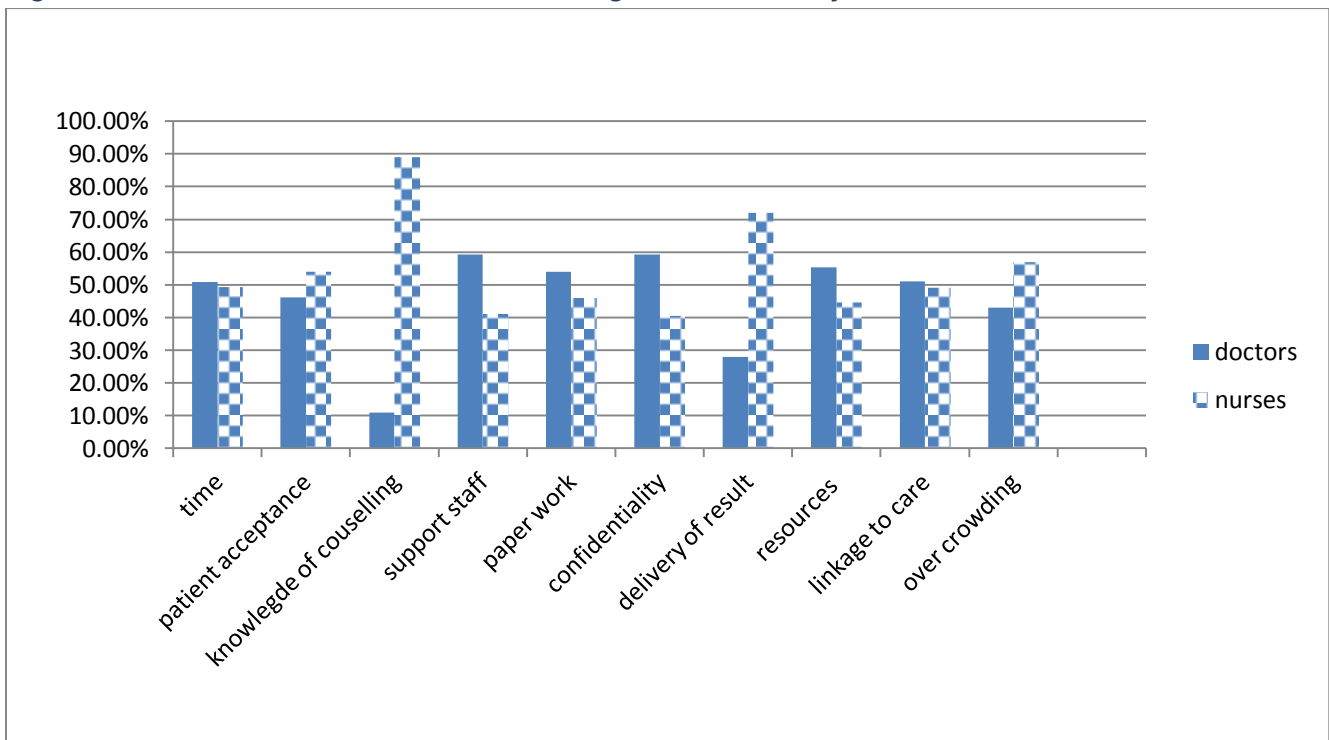


Figure 3.5: Perceived barriers to HIV testing as identified by doctors and nurses.



3.7 Factors that influence the attitude towards testing.

Table 3.5, summarizes the results of the bivariate analysis of the factors that influence ED staff attitude to routine HIV testing in the ED. Those who were comfortable with the delivery of HIV positive test results were more likely to offer HIV test (p value <0.05). Likewise, members of the ED staff who felt patients would accept routine HIV testing in the ED was more likely to support testing than those who did not (p value <0.05). There was no significant relationship between the provider role and the willingness to test. Sixty six percent of ED staff knew a relative or a friend with HIV infection. However, this bears no significant association with the willingness to test.

Table 3.5: Independent factors that favour routine HIV testing in the ED.

Variable	P-value
Gender	0.74
Race(Asians /whites)	0.002
Staff felt had enough resources	0.03
ED staff comfortable with delivering positive result	0.02
ED staff felt ED patients will accept	0.01
ED staff felt overcrowding should not be a reason not to test	0.00
Relative or friend died of HIV infection	0.09
ED staff knowledge of own HIV status	0.06

HIV= Human Immunodeficiency Virus; ED= Emergency Department

3.8 Summary

This chapter described the result obtained from the participants in the study; ED doctors and nurses in the EDs of 3 academic hospitals. It described their demographic characteristics. It also described their attitude to routine HIV testing in the ED, the identified barriers to testing and factors that influences their willingness to test.

CHAPTER 4 Discussion

4.1 Introduction

This chapter will discuss the results obtained from the analysis of the responses of the study participants. It will also discuss the results with respect to the aims and objectives of the study. This chapter will also compare the results of this study with the available literature. Possible implications of the study with respect to the planning and designing of an ED based routine HIV testing will also be discussed in this chapter.

4.2 Response rate

One hundred and seventy (170) ED staff who met the inclusion criteria for the study agreed to participate in the study. The 170 eligible respondents were not divided into provider groups as the researcher felt it was more important to divide the final study cohort into provider groups. Eighty eight respondents completed the study questionnaire within the study period of one month.

Two questionnaires were declared invalid as respondents gave conflicting demographic details, yielding a final study sample of 86, and an overall response rate of 51%. This response rate is lower than the response rate (74%) of the USHER trials (similar study) by Arbalaez et al (63), and also the 71.6% response rate of study by Al Mohajer et al (71). Both studies were in the USA. This may either reflect the general apathy towards research in our environment or research fatigue on the part of the ED staff. The 3 study centres are EDs in teaching hospitals, are regularly centres for different forms of research and ED staff are regularly approached to participate in different forms of research endeavour.

4.3 Demographics

4.3.1 Gender

A large percentage (70%) of this study participants were females. It is assumed that the nurses would have contributed to the gender discrepancy in the study population. This is not surprising as the nursing profession is to a large extent dominated by female gender. In the USHER trials, 57% of study respondents were females (63). The significance of gender in the support for ED based routine HIV testing is emphasised by the USHER trials, which notes that female ED providers were more likely than males to favour routine HIV testing in the ED (p-value=0.02)(63). Likewise, in a study by Hsieh et al to determine the emergency medicine residents' attitude and perception of HIV testing, female residents were more likely to support an ED based HIV testing(72). However, in this study, there was no significant correlation between gender and the willingness to test (p-value=0.74). This is not limited to this study. Al Mohajer et al, in a study to evaluate the knowledge and attitudes of residents and attendings in emergency medicine and internal medicine to HIV testing and the barriers to testing, also found no significant correlation between ED provider gender and the likelihood to offer HIV testing (71). This study, together with the international studies only suggest that gender may not be a consistent predictor of the willingness to offer routine HIV test in the ED.

4.3.2 Race

Slightly more than half of the participants in this study were of black racial background (56% n=86), which is a contrast to the similar international studies in the USA where a majority of participants were of white racial background (63, 71). This is understandable as it might only reflect the population demographics of the study site. Similar to the international studies, this finding is in keeping with the population demographics of the general population in South Africa (2). One may however, be tempted to dismiss this as just a reflection of the demographics of the study locations. While other studies have not demonstrated any relationship between race and the willingness to test, this study demonstrated a significant correlation between race and the willingness to test for HIV infection in the ED. Members of the white race were more likely to support routine HIV testing in the ED than those of the black race (p-value= 0.002). This the first study to demonstrate this relationship. It is difficult to determine the reason for this finding. It may not be unrelated to the stigma still associated with HIV infection within the health care system (74)

4.3.3 ED unit

While the EDs of 2 of the study centres had a dedicated trauma and medicine unit, the third study centre was a combined ED. Participants were equally distributed in the 3 ED units (trauma 30%; medicine 34%; combined 36%). This study did not set out to compare the various ED unit support for routine HIV testing. The other studies were only limited to medical EDs. This is the first of such studies to have involved the trauma unit as well as a combined unit. It is also the first study to determine whether the nature

of the ED unit, and thus the medical conditions seen had any relationship with the willingness to test. There was no significant association between the ED unit that a member of staff is assigned and the willingness to test.

4.3.4 Year of experience in an ED

The average year of experience in the ED was 4.4 years, with the least experience being 1 year and the most experienced being 20 years. Sixty seven percent (67%) of the ED staff had only worked in an ED for 4 years or less. This is not a surprise finding as firstly, the study sites are training centres where the newer, less experience members of staff are the ones likely to see a patient first in the ED. The more experienced ED staff often act in a supervisory capacity. This group is important because they are at the forefront of patient care, and if there was an ED based HIV testing, there is no doubt they will be the ones called upon to implement such programme. While this group may be the back bone of the implementation of an ED based testing, there was no significant relationship between the years of experience in an ED and the willingness to offer testing.

4.4 Knowledge of HIV infection

4.4.1 Prevalence of HIV infection in the general population of South Africa.

While there have been controversies surrounding the true value of the HIV prevalence in the general population of South Africa, the Statistics south Africa mid-year estimate for 2011 estimate the prevalence of HIV to be 10.5%(2). The UNAIDS, however,

estimates a prevalence of between 17.2%-18.3 %(74). To analyse this result, members of staff who stated figures between 11 to 20% were considered to be correct.

Of the 86 ED staff surveyed, 33(38%) admitted not knowing the prevalence of HIV in South Africa. Those who answered gave values ranging from 0.5% to 98%. Nurses were more likely to overestimate the prevalence than doctors. The most disappointing aspect is that only 8(9%) of the ED staff correctly estimated the prevalence of HIV infection in the general population. All the 8 correct values were doctors. One would expect that with the publicity given to HIV infection in South Africa in the last couple of years, and being in the fore front of the management of the complications of this disease that a lot more members of the ED staff would give a more accurate estimate of the prevalence of HIV in the general population. The poor accuracy of the values could also stem from ED staff lack of confidence in the official figures. Some members of staff do feel prevalence is higher than the official quoted values. This may have resulted in them given whatever value they felt the prevalence was irrespective of the official stated figures. ED staff knowledge of prevalence of HIV infection in the general population did not translate into the willingness to test as this study did not demonstrate any significant correlation between the knowledge of prevalence of infection and the willingness to test in the ED.

4.4.2 Prevalence of HIV infection in the ED.

Studies in USA and some parts of Africa have demonstrated an HIV prevalence of between 3.5% to 43% amongst patients in the ED(31,32,33).While this study did not set out to determine the prevalence of HIV in the EDs, ED staffs were asked to estimate the

prevalence of HIV infection in their ED. The ED staff estimated prevalence of HIV infection in the ED (SD) was 62.3(19) %. There was no difference between the estimated prevalence by doctors (62%) and nurses (63%). Nurses, as in the prevalence of HIV in the general population, were more likely to overestimate the prevalence of HIV infection in the ED. To the researcher's knowledge, there has been no study locally to estimate the prevalence of HIV infection amongst patients presenting to the ED. This may be an area for future research to strengthen the argument on the need for an ED based routine HIV testing in the Gauteng Province.

4.4.3 Knowledge of SA HIV testing guideline and CDC recommendation.

The South African HIV testing guidelines recommend that patients presenting to any healthcare facility for any complaints be offered HIV testing (22). In addition, the CDC emphasises the unique position of the ED in providing routine testing (8). ED staff demonstrated a poor knowledge of the South African HIV testing guidelines and the CDC HIV testing recommendations in the ED. To assess ED staff knowledge of these guidelines, the researcher asked ED staff in which facility routine HIV should be offered. Only 33% of ED staff felt routine testing should be offered in all healthcare facilities. Only 10% of ED staff considered the ED as one of the recommended healthcare facilities in which routine testing is to be offered. Concerning the test kit approved for routine screening in the Gauteng Province, only 15% of the ED staff correctly identified the approved test kit. However, this dismal response is not limited to this study. Al Mohajer et al demonstrated that only 24% of emergency medicine residents and attendings were aware of the current CDC recommendations concerning HIV testing in the ED (71). There was no significant relationship between the knowledge of the

guidelines and the willingness to test in this study, as well as the study by Al Mohajer et al. The researcher assumes that the poor knowledge of the guidelines in this environment might be as result of poor awareness, as well as inadequate emphasis on the increasing role of the ED in public health initiatives. Members of the ED staff may generally not perceive themselves as important contributors to public health initiatives (10, 23).

4.5 Attitudes towards HIV testing in the ED

4.5.1 Universal screening versus targeted testing in the ED

Members of the ED staff tended to prefer a universal testing of everyone living in South Africa as opposed to testing every patient that presents to the ED. There was also preference for targeted (risk based) testing over universal screening of ED patients. ED staff were more likely to offer testing to intravenous drug users, men who have sex with men and sexually active patients than to all the patients presenting to the ED. This seems to suggest that members of ED staff are in favour of universal screening, as long as it is not taking place in the ED. This is disturbing considering the prevalence of HIV infection in South Africa, and the evidence that patients are ignorant or in denial of risks for infection (16,75). This finding is in contrast to the USHER trials in which ED providers favoured routine testing over targeted testing in the ED (63). Fifty five percent of the ED providers in the USHER trials strongly favoured ED based routine HIV testing as opposed to 30% of the ED staff in this study. While only 15% of the ED staff in this study currently offer HIV testing much more than their colleagues, there was a marked increase in those willing to test if results were available within 20 minutes. A larger

percentage of ED staff in this study, compared with the USHER trials, was willing to test if results were available within 20 minutes (63% versus 35%). This sudden change in attitude may be related to the rapidity of the testing process. Time is often an important factor in the management of patients in the ED. Time has often been cited as an important barrier to HIV testing in the ED (63,68, 70). This has important implications for the implementation of an ED based testing programme. Programme design must be such that it limits the time needed for counselling, obtaining consent and testing.

4.5.2 Who should disclose an HIV positive result?

A trained health care professional is responsible for administering HIV testing (22). There was a general consensus among the ED staff in this study that an HIV counsellor should disclose the results of a positive HIV test. In contrast, in the study to compare the attitude of staff and patient to ED based HIV testing in 2 urban EDs by Hecht et al, ED staff preferred that positive results be delivered by the doctor (70).

ED staff preference for HIV counsellor as opposed to the doctor in this study might highlight ED staff inadequate training in HIV result disclosure and post-test counselling. Another reason may be due to the concern for the time required in disclosing a positive HIV test result, providing counselling and psychological support in the ED. It might also be related the potential burden of linking newly diagnosed patients to a definitive HIV care facility. Hence, the shifting of responsibility of disclosure of positive result to a HIV counsellor seems logical. There was no difference in provider groups' preference for who should disclose a positive result. The delegation of the responsibility to disclose

results of test to HIV counselors may be feasible with the implementation of the task shifting policy which delegates aspects of care of HIV patients to trained health care workers (22).

4.5.3 Reason for not offering routine HIV testing in the ED

ED staffs were asked to identify why they would not routinely offer HIV testing to patients in the ED. lack of time (58%) in the busy schedule of the ED was identified by ED staff as the most compelling reason for not offering routine HIV testing. This is also highlighted by the increase in the proportion of ED staff willing to test if result was available within 20minutes. In the study by Al Mohajer et al, “not medically indicated to test every patient in the ED” (53.10%) was identified as the most common reason why HIV testing was not offered (71). Only 37.6% of respondents identified lack of time as a reason for not testing in Al Mohajer’s study. This difference in findings might be as a result of the difference in characteristics of both study EDs, as well as the patients seen in the EDS.

About a third of ED staff surveyed in this study felt the ED should not be burdened with public health issues. This demonstrates that either members of the ED staff were still unaware of the role the ED plays in public health initiatives, or are not keen on accepting this added responsibility of HIV testing for the fear of the perceived increased burden of work. Twenty one percent of ED staff in this study cited “a lot of patients will come to the ED just to be tested” as a reason they would not offer testing. This concern was also highlighted in the Study by Hecht et al, in which 50% of those surveyed identified “patient surge to the ED just to get tested” as a reason for not offering routine

HIV testing (70). “Routine HIV testing is not recommended” and “cannot be responsible for linking patients to care” were other important reasons for not offering HIV test in the ED in this current study. These latter reasons were not demonstrated in other international studies. Twenty percent of the ED staff felt routine HIV testing in the ED was not recommended, further emphasising the poor knowledge of the various testing guidelines amongst members of the ED staff.

4.6 Perceived barriers to routine HIV testing in the ED

The implementation of universal HIV testing programme in the ED might be adversely affected by various barriers (67), because of the unique characteristics of the ED setting. Perceived barriers by the ED staff may make the implementation of routine HIV testing programme in the ED difficult. Some of these barriers are not limited to HIV testing, but have also been identified in other preventive studies in the ED conducted in the USA (46,47,48,49). ED providers in various studies have identified time constraints, inadequate resources, lack of support staff, concerns about securing follow up care, lack of confidentiality, cumbersome paperwork, concerns about counselling and obtaining consent, and patient’s acceptance as barriers to offering routine test in the ED (63,70,72).

In this study, ED staff cited “time”(77%), “lack of resources” (77%), “lack of adequate support staff” (71%), and concerns regarding securing follow up care (64%) as the most important barrier to routine HIV testing in the ED. This is similar to the USHER trials, which identified “lack of resources” (70%), “time constraints” (51%), and “inability to

secure follow up care” (50 %) (63). Hecht et al, identified “counselling requirements”, “ED overcrowding”, and “lack of confidentiality” as the most frequently reported barriers in their study (70).

Hseish et al, identified “time”, “lack of support staff” and “paper work” as the most important barriers to ED based HIV testing (72). There are similarities and differences in the barriers identified in the different studies. This may be related to the different ED characteristics. The similarity in cited barriers with the USHER trials maybe because the survey instrument used in this study was a close adaptation of that used in the USHER trials. However, the respondents’ demographics are different in both studies.

There was a difference in the frequency of barriers reported by doctors and nurses in this study. This is in contrast to the Usher trial in which the important barriers in the doctor group and the staff group were reported with similar frequencies (63). “Knowledge of counselling procedures” (88.9%) and “delivery of positive results” (72%) were cited as the most important barriers by nurses, while “lack of support staff”(59.2%) and “concerns for patient’s privacy and confidentiality” (59.2%) were the most important barriers identified by doctors. Identifying these different barriers by the different provider groups may help tailor training strategies to the needs of the different provider groups.

The presence of major barriers is associated with ED provider poor support for ED based HIV testing (8,63). Improvement of these barriers will increase ED staff willingness to test (63). This was demonstrated in this study as the percentage of members of the ED staff willing to offer testing increased when results of test was available within 20 minutes. The identification and elimination of these barriers is crucial

for the planning of an ED based HIV testing as the support of the members of the ED staff is important to the successful implementation of any initiative in the ED.

4.7 Factors that influence attitude of ED staff

ED attitude towards HIV testing may be influenced by a lot of factors ranging from gender to perceived barriers (63,70,72). In this study, certain factors were associated with ED staff willingness to test. Those who do not perceive “resources”, “delivery of test result”, “overcrowding” and “patient refusal” as barriers were more likely to offer HIV testing. These findings are not unexpected as members of ED staff would be less likely to support an ED based testing as the number of their perceived barriers increases. The fewer the barriers, the more the likelihood that ED staff will offer HIV testing. In contrast to these findings, those who felt they had time and understood the legal requirements for testing were more likely to support HIV testing in the USHER trials (63).

“Lack of resources” was identified as one of the most important barriers to the implementation of an ED based testing in this study. It is understandable that members of the ED staff that did not see resources as a barrier to testing were willing to test. This finding highlights the direct relationship between perceived barriers by ED and their support for testing.

While “delivery of test” result wasn’t one of the most important barrier overall, it represents one of the most important barriers among nurses in this study. This explains the majority of the ED staffs’ decision to rather delegate the delivery of test result to the HIV counsellor in this study.

In addition to the factors that have been associated with support for testing in previous studies, this study sought to find if there was also a relationship between ED staff willingness to test and the knowledge of own HIV status, known relative or family with HIV infection or that has died of AIDS. There was no significant relationship between ED staff knowledge of own status, known relative or family with HIV infection or that has died of AIDS and the willingness to test. This is somewhat surprising as one would expect a member of the ED staff who knows a relative or friend with HIV infection to view HIV testing as a mission and overwhelmingly support testing.

4.8 Summary

This chapter discussed the analysis of results obtained from the study participants. It compares the result obtained with existing international literature. The results of this discussion demonstrate ED staff preference for targeted HIV testing in the ED. While few supported routine testing in the ED initially, majority were willing to offer routine test if results were available in a timely manner. It demonstrates ED staff discomfort with disclosure of positive result and counselling. It also indicated that members of ED staff were poorly aware of the current local and international HIV testing guidelines. Lastly, it discussed the important barriers identified by the staff to routine testing and factors that might influence ED staff support and likelihood to offer HIV.

Chapter 5 conclusions

5.1 Introduction

This chapter will conclude the research in the context of various limitations and biases which may have influenced the results of this study. It also suggests a number of recommendations for the future implementation of an ED based HIV testing in the South African context.

5.2 Limitations and biases

The conclusions from this study must be interpreted in light of the limitations and biases that may have influenced the results and final conclusions of this study. These include:

Firstly, the 3 study sites were in academic hospitals in urban areas. This, together with the small sample size, might prevent the application of the results in other EDs. The findings may not reflect the opinion of the general ED staff.

In addition, the different characteristics of the ED staff in the 3 study centres may have resulted in a response bias. For example, in one of the study centres, certain members of staff were currently studying for their masters. This could have increased their interest in the research as opposed to other study centres.

The classification of professional and sub professional nurses into the same category could have introduced a bias into the response of the nurse category due to the difference in the level of training and exposure of both groups.

It is possible that the members of ED staff who responded to the study may have been those who are favourably disposed to HIV testing in the ED, and those who did not

respond may be overwhelmingly against testing in the ED. This could have resulted in a response bias.

Analysis was carried out on data gathered through a survey instrument, which was an adaptation of the survey instruments used in 2 previous studies. Despite its good face value, it was not a validated instrument. A pilot study was also not conducted using the survey instrument.

Analysis was also carried out on data gathered through a survey instrument given to staff members to complete in their spare time. One could not be sure if the questionnaire was completed by the respondent or if the respondent was assisted as some took the questionnaires home.

On some occasions, survey instruments were distributed during the lunch break, meaning members of staff completed survey in groups. This could have resulted in a response bias as a respondent may be under peer pressure to answer some questions in ways contrary to respondent's views.

One of the survey sites shares its facility with a HIV counselling and testing centre. There could have been an oversampling of the staff in this particular ED which in turn could have influenced the overall response of ED staff.

The study design requires that data be collected in the 3 EDs over the duration of the study by the researcher. Potential respondents may have been inadvertently excluded as the researcher was not present in the EDs all of the time. However, efforts were made by the researcher to ensure that the time of collection of data coincided with the new shift resumption from either a night duty or off.

There is currently an electronic gate-keeping decision made by the National Health laboratory Service (NHLS) which precludes HIV testing in the study EDs. This could have introduced a bias into the responses of the study participants.

Lastly, it is possible that the brief explanation of the study and its implications by the researcher to each participant may have influenced the response to questions in the survey instrument.

5.3 Conclusion

This research report sought to determine the attitude of the medical and nursing staff of 3 EDs to routine HIV testing in their various EDs, as well as identify factors that may motivate their attitude. It also sought to determine the barriers to routine HIV testing in the ED from the perspective of the ED staff.

In the context of the limitations and the biases mentioned, the following deductions can be inferred from this research study:

- ED staff are neither aware of the exact magnitude of the HIV disease nor the current local nor international HIV testing guidelines.
- Members of the ED staff generally support routine HIV testing in the local population as long as it is not within the ED environment.
- A fairly large percentage of ED staff prefer risk based HIV testing over non targeted testing if HIV testing is to be implemented in the ED setting.
- An overwhelming majority were willing to offer routine non targeted testing in the ED if testing and result were available in a timely fashion, indicating that HIV

testing is not the problem, but the barriers to testing in the unique environment of the ED.

- Members of the ED staff are willing to offer routine HIV testing in the emergency department, but the presence of perceived barriers may reduce ED staff support for such initiative.

5.4 Recommendations

Routine HIV testing in the ED may help identify increased numbers of new cases of HIV infection. The decision by the NHLS not to test for HIV infection in the ED is unacceptable as it not only opposes the current South African HIV testing guidelines, but may inadvertently deprive a certain group of patients the knowledge of their status and therefore access to early treatment. The results of this study underline the importance of perceived barriers to HIV testing in the ED. It is necessary to understand ED staff perceived barriers to testing as this is directly linked to staff support of HIV testing (64). The following recommendations are suggested:

- The NHLS gate-keeping policy that precludes HIV testing in the ED should be reviewed to enable testing in the ED.
- HIV testing guidelines should be reviewed such that counselling protocols can be appropriate for settings such as the ED. Pre-test and post-test counselling can be delivered via video and information materials available in the 11 official languages of South Africa. Also the consent process should be integrated into

the general medical consent. This further helps to reduce the stigma associated with the disease (8).

- Addressing these barriers in the long term by Developing a training and educational program that helps ED staff to be comfortable with HIV counselling, testing and the disclosure of positive results.
- Further research is necessary, regarding the prevalence the undiagnosed HIV infection in the ED, patients' acceptance of an ED based HIV testing, and ED based HIV testing feasibility studies in South Africa.

5.5 Summary

This chapter discussed the various biases and limitations to the study. It also provided the conclusions arising from this study. Finally, it provides a list of recommendations that may help address the barriers to routine HIV testing in the ED in the long term.

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APPENDIXES

INFORMATION SHEET

ATTITUDE AND PERCEIVED BARRIERS BY EMERGENCY DEPARTMENT STAFF TOWARDS ROUTINE HIV TESTING IN THE EMERGENCY DEPARTMENT.

INTRODUCTION

Good day. My name is Dr. Mojeed; Oluwaseyi. M., I am a Post graduate student in the Faculty of Health Sciences, University of the Witwatersrand. Please I would like to invite you to participate in a research study titled: **“ATTITUDE AND PERCEIVED BARRIERS BY EMERGENCY DEPARTMENT STAFF TOWARDS ROUTINE HIV TESTING IN THE EMERGENCY DEPARTMENT”**.

This is in partial fulfilment of a Master of Science in Medicine in Emergency Medicine.

It is important that you read and understand the following before agreeing to participate in the study: procedures, benefits, and risk.

PROCEDURES

You will be required to fill a 6-page survey containing your knowledge of HIV, attitude to HIV testing in the ED, and the perceived barriers by you to HIV testing in the ED. An approximate time of 10 minutes is required to complete the survey.

RISKS AND DISCOMFORTS

There are no risks associated with this study

BENEFITS AND COMPENSATION

The benefits of this study is that it will give a better understanding of the identified obstacles to routine HIV testing in the ED, in a bid to address these concerns in the design and implementation of a routine HIV testing programme in the ED. You will not be compensated for your participation.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary and you are free to withdraw from this study at any time in the course of the study. Furthermore, you have the right to decline to answer questions you are not comfortable with.

CONFIDENTIALITY

The access to data collected will only be granted to the researcher and the supervisor. In addition, your name will not be required in the questionnaire.

CONTACTS AND QUESTIONS

For further information and questions, the researcher can be reached at the Division of Emergency Medicine, Faculty of Health Sciences, University of the Witwatersrand, Johannesburg.

Tel- 0783754301, or email at seyimojeed@yahoo.com .

QUESTIONNAIRE

ATTITUDE AND PERCEIVED BARRIERS BY EMERGENCY DEPARTMENT MEDICAL AND NURSING STAFF TOWARDS ROUTINE HIV TESTING IN THE EMERGENCY DEPARTMENT.

Please answer this questionnaire in the context of the situation where an HIV test could be done from the emergency department (in the context of electronic gate-keeping decisions made by the NHLS which may interfere with this process)

DEMOGRAPHICS

1. Gender: a. Male ☐ b. Female ☐
2. Race: a. Black ☐ b. White ☐ c. Coloured ☐ d. Indian/Asian ☐
3. Highest educational qualification: a. National Diploma ☐ b. Graduate ☐
c. Postgraduate ☐
4. Professional title: a. Doctor ☐ b. Nurse ☐
5. Experience in any emergency department (in years): _____
6. In what kind of emergency department unit are you currently working?:
a. Medicine ☐ b. Trauma ☐ c. Combined ☐

KNOWLEDGE OF HIV INFECTION

1. What is the prevalence of HIV infection in the general population in South Africa (Please be as precise as possible): _____%_ Do not know ☐
2. What is the prevalence of HIV infection in the patients presenting to your emergency department (be as precise as possible % Do not know ☐

3. The South African Guideline on HIV testing states that all patients that present to which of the following facilities should be screened for HIV infection(check all that apply)

- a. ☐ Antenatal Clinics
- b. ☐ Tuberculosis Clinics
- c. ☐ Emergency Departments
- d. ☐ Sexually transmitted diseases Clinics
- e. ☐ Outpatient Departments
- f. ☐ Specialists Clinics
- g. ☐ All healthcare facilities

4. What test kit is used in HIV screening in Gauteng Province (check all that apply)?

- a. ☐ Advanced quality
- b. ☐ G Ocean
- c. ☐ SD Bioline
- d. ☐ First response
- e. ☐ Determine
- f. ☐ I don't know

5. Decide whether the following statements are true or false

a. Rapid HIV test is a reliable test?

YES ☐ NO ☐ ☐ I DON'T KNOW

b. It will be easier to perform rapid HIV test in the emergency department than the traditional blood test?

YES ☐ NO ☐ ☐ I DON'T KNOW

c. I am feel inadequately trained to perform the rapid HIV test.

YES ☐ NO ☐

6. How much time does it take to offer an HIV test, obtain consent and provide results to a patient who tests **HIV-negative**?
- a. ☐ 5minutes.
 - b. ☐ 6-20 minutes
 - c. ☐ 21-35 minutes
 - d. ☐ 36minutes
 - e. ☐ I don't know
7. How much time does it take to offer an HIV test, obtain consent,provide results and referral to a patient who tests **HIV-positive**?
- a. ☐ 5minutes
 - b. ☐ 6-20 minutes
 - c. ☐ 21-35 minutes
 - d. ☐ 36 minutes
 - e. ☐ I don't know
8. Which of the following patients do you believe should be offered an HIV test in the emergency department (Check all that apply)?
- a. ☐ Intravenous drug users
 - b. ☐ Men who have sex with men
 - c. ☐ All pregnant women
 - d. ☐ All sexually active men and women
 - e. ☐ All patients presenting to the emergency department
 - f. ☐ All patients in areas with a HIV rate > 0.5%
 - g. ☐ All patients in areas with a HIV rate > 1%
 - h. ☐ All patients in areas with a HIV rate >5%
 - i. ☐ Everyone living in South Africa

9. What is the likelihood that you would offer a routine HIV test to a patient presenting to the emergency department if results were available within 20 minutes?

- a. ☐ Rarely
- b. ☐ Occasionally
- c. ☐ Most of the time
- d. ☐ All of the time

10. Why would you not offer an HIV test in the emergency department (check all that apply)?

- a. ☐ It is not a currently recommended guideline
- b. ☐ I will not find enough patients to make it worth doing
- c. ☐ It is too expensive
- d. ☐ I do not have enough time in a busy emergency department to address HIV
- e. ☐ As an emergency department staff member, HIV testing is not my responsibility
- f. ☐ I cannot be responsible for getting HIV infected patients to appropriate follow up after a new diagnosis is made
- g. ☐ I feel too uncomfortable discussing HIV risks
- h. ☐ I feel inadequately trained to discuss HIV risks
- i. ☐ I feel inadequately trained to get consent for HIV testing
- j. ☐ I am too uncomfortable delivering a new HIV diagnosis
- k. ☐ I feel inadequately trained to deliver a new HIV diagnosis
- l. ☐ If we start testing, there will be lots of persons who come to the emergency department just to get tested.
- m. ☐ The emergency department is an acute care centre and should not be burdened with public health issues

11. Do you think you offer HIV testing:

- a. ☐ Much more frequently than your colleagues
- b. ☐ About the same frequency as your colleagues
- c. ☐ Much less frequently than your colleagues
- d. ☐ Rarely offer HIV testing

12. Which one of the following person do you believe should disclose the results of a positive HIV test to a patient?

- a. ☐ Nurse
- b. ☐ Registrar
- c. ☐ Consultant
- d. ☐ HIV counsellor
- e. ☐ Social Worker

Please place a tick in the box that best indicates your opinion	Strongly agree	Agree	Disagree	Strongly disagree
I have enough time to provide HIV testing in the emergency department				
Patients in the emergency department should accept routinely testing for HIV				
I have enough knowledge to provide HIV counselling and testing				
I have adequate support staff for HIV counselling and referral				
The additional paper work required for HIV testing is easily manageable				
I can ensure adequate patient privacy and confidentiality in the delivery of HIV testing in the emergency department				
I am comfortable delivering HIV test results				
There are enough resources and funding to routinely test for HIV in the emergency department				
I am able to get an HIV positive patient into treatment program				
Overcrowding should not be a reason to avoid routine HIV testing in the emergency department				
There is no barrier to routine HIV testing in the emergency department				

Please tick the appropriate response

Have you had any previous training in HIV counselling skills?

a. Yes ☐ b. No ☐

Have you had any previous training in HIV testing skills?

a. Yes ☐ b. No ☐

Have you ever had a needle stick injury?

a. Yes ☐ b. No ☐

Do you know a relative or friend who has died of AIDS?

a. Yes ☐ b. No ☐

Do you know a relative or friend who has been diagnosed with HIV infection?

a. Yes ☐ b. No ☐

Do you know your own HIV status?

a. Yes ☐ b. No ☐

THANK YOU FOR YOUR TIME



UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Division of the Deputy Registrar (Research)

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

R14/49 Dr OM Mojeed

CLEARANCE CERTIFICATE

M120607

PROJECT

Attitude and Perceived Barriers by Emergency
Medicine Department Staff towardw Routine
HIV Testing in the Emergency Department of

Three Academic Centre

INVESTIGATORS

Dr OM Mojeed.

DEPARTMENT

Division of Emergency Medicine

DATE CONSIDERED

29/06/2012

DECISION OF THE COMMITTEE*

Approved unconditionally

Unless otherwise specified this ethical clearance is valid for 5 years and may be renewed upon application.

DATE 27/07/2012

CHAIRPERSON 
(Professor PE Cleaton-Jones)

*Guidelines for written 'informed consent' attached where applicable

cc: Supervisor : Prof Efraim Kramer

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10004, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to a completion of a yearly progress report.**

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES...



GAUTENG PROVINCE

HEALTH
REPUBLIC OF SOUTH AFRICA

CHARLOTTE MAXEKE JOHANNESBURG ACADEMIC HOSPITAL

Office of the CEO

Enquiries:

Ms. L. Mngomezulu

(011): 488-3793

(011) 488-3753

03rd September 2012

Dr. O.M. Mojeed
Emergency Medicine
CMJAH

Dear Dr. Mojeed

RE: "Attitude and perceived barriers by emergency medicine department staff towards routine HIV Testing in the Emergency Department of Charlotte Maxeke Johannesburg Academic Hospital"

Permission is granted for you to conduct the above research as described in your request provided:

1. Charlotte Maxeke Johannesburg Academic hospital will not in anyway incur or inherit costs as a result of the said study.
2. Your study shall not disrupt services at the study sites.
3. Strict confidentiality shall be observed at all times.
4. Informed consent shall be solicited from patients participating in your study.

Please liaise with the Head of Department and Unit Manager or Sister in Charge to agree on the dates and time that would suit all parties.

Kindly forward this office with the results of your study on completion of the research.

Yours sincerely

Dr. T.E. Selebano
Chief Executive Officer



health and
social development
Department: Health and Social Development
GAUTENG PROVINCE

PERMISSION FOR RESEARCH

DATE: **13 September 2012**

NAME OF RESEARCH WORKER: **Dr OM Mojeed**

CONTACT DETAILS OF RESEARCH (INCLUDE ALTERNATE RESEARCHER):

Cell: **078 875 4301**

Email: **seyimojeed@yahoo.com**

TITLE OF RESEARCH PROJECT:

**Attitude and Perceived Barriers by Emergency Department Staff towards
Routine HIV Testing in the Emergency Department of Three Academic
Centres**

OBJECTIVES OF STUDY (Briefly or include a protocol):

See Attached Protocol

METHODOLOGY (Briefly or include a protocol): **See Attached Protocol**

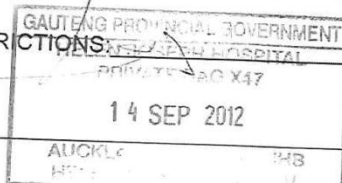
THE APPROVAL BY THE SUPERINTENDENT IS STRICTLY ON THE BASIS OF THE
FOLLOWING:

- (i) CONFIDENTIALITY OF PATIENTS MAINTAINED: **Yes**
- (ii) NO COSTS TO THE HOSPITAL: **Nil**
- (iii) APPROVAL OF HEAD OF DEPARTMENT: **Yes**
- (iv) APPROVAL BY ETHICS COMMITTEE OF UNIVERSITY: **Yes**

SUPERINTENDENT PERMISSION

Signature: **[Signature]** Date: **14/9/2012**

SUBJECT TO ANY RESTRICTIONS



Helen Joseph Hospital
Perth Road
Tel: 011 489 1011

Private Bag X47
Auckland Park
2006



GAUTENG PROVINCE

HEALTH
REPUBLIC OF SOUTH AFRICA

MEDICAL ADVISORY COMMITTEE
CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL

PERMISSION TO CONDUCT RESEARCH

Date: 04 September 2012

TITLE OF PROJECT: Attitude and perceived barriers by emergency department staff towards routine HIV testing in the Emergency Department of three academic centres

UNIVERSITY: Witwatersrand

Principal Investigator: Dr M Mojeed

Department: Emergency Medicine

Supervisor (If relevant): Prof E Kramer

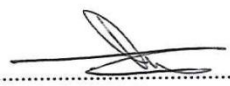
Permission Head Department (where research conducted): Yes

Date of start of proposed study: September 2012

Date of completion of data collection: October 2012

The Medical Advisory Committee recommends that the said research be conducted at Chris Hani Baragwanath Hospital. The CEO /management of Chris Hani Baragwanath Hospital is accordingly informed and the study is subject to:-

- Permission having been granted by the Committee for Research on Human Subjects of the University of the Witwatersrand.
- the Hospital will not incur extra costs as a result of the research being conducted on its patients within the hospital
- the MAC will be informed of any serious adverse events as soon as they occur
- permission is granted for the duration of the Ethics Committee approval.


Recommended
(On behalf of the MAC)
Date: 04 September 2012




Approved/Not Approved
Hospital Management

Date: 17/09/12


Dr. P. Indeser