PATIENT PROFILE OF UNINSURED PATIENTS AT A PRIVATE EMERGENCY DEPARTMENT

Nicole Dippenaar (Fourie)

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Candidates declaration

I, **Nicole Dippenaar (Fourie)** declare that this research report is my own work. It is being submitted for the degree of **Master of Science in Medicine (Emergency Medicine)** at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at this or any other University.

…….. (signature)

The ……day of ……., 2018

Abstract

Background The aim of this study is to determine the patient profile of uninsured patients presenting to a private emergency department over a 3-month period. The study also looks at the time these patients spend in the private emergency department as well as reasons for delay in transfer when present. The study aims to assist the private emergency department in making financial and administrative plans for anticipated numbers of uninsured patients presenting to the unit in the future.

Methods The study is a retrospective, cross-sectional study, reviewing patient data of uninsured patients presenting to a private emergency department in Tshwane over an allocated period from 01 September 2014 to 30 November 2014. The study population is any uninsured patient presenting to the private emergency department over the 3-month period and was identified by searching the existing patient register in the unit. The data collected includes age, gender, priority of the patients according to triage protocol, provisional diagnoses, outcome, time that a patient spends in the unit before transfer, admission or discharge and reasons for delay in transfer if experienced. The number of patients over the entire period as well as over each individual month was recorded and analysed.

Results The total number of uninsured patient visits to the private ED over the 3-month period was 503 which included follow up visits. The total number of ED visits for insured and uninsured patients was 6505. Uninsured patients accounted for 7.7% of the total number of visits to the ED. There was a total of 427 uninsured patients (excluding follow up visits) seen in the private ED over the 3-month period. This is the study sample number. There were on average more patients seen over the weekend and the majority

of all the uninsured patients were non-urgent cases. Seventy nine percent were discharged, 12% were transferred to a government facility, 7% were admitted to the private facility and 2% refused hospital treatment. There were 20 delays in transfer to government facilities identified.

Conclusions The study provides insight into the patient profile and number of uninsured patients presenting to a private emergency department in South Africa over a 3-month period. This data can assist the emergency department in planning and managing these patients who often present a challenge to the physician due to delays when transferring the ill patients to government facilities.

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Chapter 1: Introduction

The South African health care system is characterised by marked inequalities. During the apartheid years these inequalities were due to racial divisions but are currently mainly as a result of socio-economic standing. A paper by Mcleod and co-workers from the Western Cape South Africa, published in 2010 outlines the South African health system and describes a risk equalisation formula that was developed. This is an attempt to introduce more solidarity into the small and highly competitive private medical aid/insurance market. South Africa is in the process of implementing major reforms in the financing of healthcare. Changes have been envisaged by the country's new democratic government in policy papers since 1994.[1]

Harris and co-workers conducted a national household survey in South Africa in 2008 which included 4668 participants. The survey investigates access barriers to health care for the general population of South Africa. The African population, the poor, the uninsured and those living in rural areas face the greatest challenges in accessing good healthcare.[2] There are disparities in the standards of care with the majority of the population unable to access private medical health care due to the high associated costs.[3,4,5] The public health system is dependent on funding from the government and health care is free for the unemployed and people with a low income level.[1]

Eighty four percent of the South African population do not belong to a private medical aid or insurance and cannot afford private health care costs, while approximately 16%

of the population do have access to this sector where healthcare is well developed and resources intensive.[3] This private health sector is generally perceived by the public as being superior to the public sector.[3,4,6] People in metropolitan areas are about four times more likely than those in rural areas to belong to a medical aid scheme in South Africa.[1,7] A number of uninsured patients use private general practitioners and pharmacies for primary health care on an 'out-of-pocket' basis but are dependent on the public sector for hospitalisation or specialist services.[1] There are also many South Africans who consult traditional healers on an 'out-of-pocket' basis.[1,5]

The private health sector is an attractive environment for health care personnel with large numbers working in this relatively over-resourced domain.[1,5] In addition, many practitioners are leaving the public-sector due to deteriorating working conditions and increasing levels of frustrations.[8,5] An article published by Stanley, a cardiologist in private practice, in the South African Heart Journal in 2008, voices an interesting perspective on health care funding in South Africa. It compares the public sector, providing basic service to the majority of uninsured patients in South Africa to the rapidly growing private sector. It emphasizes the current problems and inequalities mentioned above.[8]

According to a review in 2008 by Wolvaardt and co-workers which looks at the role of private and other non-governmental organisations in primary health care in South Africa, since 1994, the number of South Africans with medical insurance accessing the

private sector has remained approximately the same but the number of uninsured patients accessing private care has significantly increased.[9] This trend has been observed from work experience in the private emergency care sector and is the reason behind the interest in conducting this study. There has also been a change in the demographics of the employed population with the emergence of the African middle class.[9,2] Many of these people however, do not invest in medical aid or insurance and are willing to pay 'out-of-pocket' for primary and emergency health care.[9,10] In a newspaper article published on October 16, 2014 in the Business Day, it was noted that uninsured patients also turn to private facilities as frustrations are fewer, the system is efficient and in general patient satisfaction is higher.[3]

Emergency departments (EDs) play a crucial role in community and public health. A South African hospital or health care worker may not delay or refuse treatment of a patient in the emergency setting to first establish his or her insurance status or method of payment. There is an important relationship between the public and private healthcare sector. Both are dependent on each other in certain circumstances. In an article by Bateman, published in the South African Medical Journal in 2005, the relationship between public and private pre-hospital emergency services are described as conflicting.[11] The South African National Health Act No.61 of 2003 stipulates that no person may be refused emergency medical treatment.[12] A private hospital or emergency service can therefore not close its doors to the uninsured patient or refuse a patient emergency medical treatment due to financial constraints.[11,13]

The transfer process is often delayed for both stable and unstable patients due to a shortage of inpatient beds at public facilities, especially for those patients who need to be admitted to a high care or intensive care unit. This results in prolonged stays in the private ED. There also seems to be, from personal work experience in a private ED, a reluctance from the public sector to accept patients from private facilities. This is a general observation and is doctor and department dependent. One of South Africa's top private hospital emergency co-ordinators stated to the author Bateman at the time of publishing the article mentioned above that it took her an average of 7-9 hours to transfer a stabilised patient from her private hospital to any state one.[11] Himmelstein and co-workers conducted a study in 1984 in California looking at 458 consecutive patient transfers from 14 private hospitals to public hospital EDs over a 6-month period. They concluded that transfer resulted in substandard of care for 33 of these patients, either because they were at risk for complications in transit or because urgently needed diagnosis or therapy was delayed.[14]

Weiner, from the University of Illinois, Chicago published an article in 2001 which focuses on 3 dilemmas that physicians face when patients are not able to pay for needed medical services. These highlight the problems faced when financial matters become intertwined with medical considerations in the process of clinical decision making. The physician can refer the patient to a public facility, forego indicated tests and therapies or reduce fees by fee waivers or adjusted billing. The inability of a patient to pay for services in the private sector may influence the physician's clinical decision-making.[15]

The aim of this study is to determine the patient profile of uninsured patients presenting to a private emergency department over a 3-month period, from 1 September 2014 to 30 November 2014. The number and frequency of uninsured patients presenting to the private ED over the study period as well as over each month individually are described. The basic demographics (gender, age) of the uninsured patients seen over the study period are described. The priority of the uninsured patients seen in the private ED over the study period are described according to a triage system. The provisional diagnosis and outcomes of the uninsured patients seen in the private ED over the study period are described. The study examines the length of time patients spent in the private ED from arrival in the ED to transfer, admission or discharge. The reasons for delay in transfer of uninsured patients to government facilities, when identified were described. A control group of insured patients presenting to the private ED requiring admission over one month of the study period was included.

It has been observed that there are many uninsured patients attending private EDs in South Africa. They place an additional strain on already busy units. There is little known about the profile of these patients which the study aims to examine. This study will assist a private ED in formulating financial plans with regard to estimated numbers of uninsured patients presenting to the ED in future.

Chapter 2: Literature review

2.1 Patient Expectations in the Emergency Department

In a letter of correspondence by Mahomed and co-workers, published in the South African Medical Journal in 2015, the authors state that there has been growing concern in South Africa regarding care received in the public sector ED's. Problems identified include overcrowding and long waiting times that compromise the care given. The South African public has certain expectations of emergency care and their interaction with the system and medical personnel. These expectations are influenced by various external factors such as cultural background, understanding of their illness, attitudes and health beliefs. They conducted a survey to determine patient expectations of a local population attending a public-sector ED in South Africa. It was noted that waiting time is a key factor in patient satisfaction in the ED.[16]

Lateef, based in Singapore, published a literature review in 2011 which discusses patient expectations with the implementation of patient-centred and value-based care in their health care systems. Patients may not even be aware of some of their own expectations and standards. Unmet expectations can lead to a range of reactions. In the ED environment patient stress and anxiety levels are high due to the acute nature of the presenting problems. Patients generally expect to be heard and their problem understood as soon as possible. They expect to be treated with compassion, care and concern by the ED staff. Patients also generally expect a clear explanation of their

condition, details regarding the results of investigations done and clear discharge or admission instructions.[17]

Little and co-workers conducted an observational study in the waiting rooms of 3 doctors' practices in Southamptom, United Kingdom. The results were published in the British Medical Journal in 2001. They found that a patient-centred approach is preferred among these patients, allowing them to be partners in their own care and take ownership of their health.[18]

Shah and co-workers conducted a pre-post study in Chicago, in 2008-2009, including 1209 non-equivalent adult ED discharge patients. They were given an in-house patient satisfaction questionnaire to complete. The study showed that patients were more likely to accept longer waiting times provided their expectations are managed with effective communication.[19] Coordinated and seamless patient and system flow will assist with overall satisfaction as well as improve patient safety. Patients should receive adequate information with continuous feedback and communication.[17,19] Unfortunately, in the public healthcare sector, where patient numbers are often high, staff are stretched and under pressure, this communication process fails. The patient will then often seek care in a private ED where the patient load is less and communication and patient satisfaction is improved.[16] It has been observed from personal work experience in a South African private ED that patients often leave the public ED waiting areas in frustration and seek care at private facilities.

A cross-sectional English language telephone survey conducted by Cook and co-workers in Calgary, Canada in 2002 investigated patient expectations regarding staff communication, waiting times, the triage process and the management of information. The results show patients value short waiting times and effective communication over many other aspects of care and increased focus on these aspects may increase ED efficiency and patient satisfaction.[20]

2.2 Patient satisfaction in the Emergency Department

Statistics South Africa's General Household Survey 2012 revealed that 71% of South Africans will visit public clinics and hospitals if needed. Of these, 79.2% were satisfied with the services rendered by public health care facilities, compared to a 97.1% satisfaction rate among users of private health care facilities.[13] Patient satisfaction is influenced by experiences before and after the ED encounter and are a combination of met and unmet expectations.[20]

Toma and co-workers conducted a cross-sectional study of consecutive patients completing surveys at the beginning and end of their ED visits. The study was conducted in New York and the results were published in 2009. They aimed to measure the effect of meeting ED patients' expectations for diagnostic and therapeutic interventions on patient satisfaction. Their results show that overall patient satisfaction is strongly related to the patient's assessment of the health care practitioner's

interpersonal skills and not whether expectations about diagnostic and therapeutic criteria had been met.[21]

A study conducted by Kamali and co-workers surveyed non-urgent patients in the ED waiting room to investigate their preferences and expectations. Non-urgent was defined as a patient waiting more than 15 minutes from the time of triage. A 42-item survey was given to 400 adult patients in the ED waiting room in an academic tertiary care hospital ED in New York in 2010. They found that about a third of patients wanted to be triaged by the doctor. The mean acceptable waiting time before leaving the ED was 221 minutes. The most common complaint was pain. They expected better estimations of their waiting times as well as more information on the reasons for the long wait.[22]

2.3 Emergency care in South Africa

Wallis and co-workers published an article in the International Journal of Emergency Medicine in 2008 discussing the state of emergency medicine in South Africa. The authors noted that South Africa has a unique emergency medicine patient group. The country has high levels of poverty and unemployment which contribute to an ever-increasing burden of disease. The disease burden is four-fold including HIV/AIDS, infectious diseases, violence and chronic lifestyle diseases. The cases are often variable and the volumes large. The number of blunt and penetrating trauma cases are large with approximately one-third of admissions to EDs being due to injuries.[23]

An article published in the South African Medical Journal in 2012 by Reid and co-workers discusses the development of emergency medicine in South Africa and challenges facing the South African emergency medicine sector. There is much growth in the South African emergency setting with the introduction of emergency physician specialists, following in the footsteps of countries leading in the field of emergency medicine such as Australia and America. There is still a shortfall, however putting obvious resource shortages aside, in basic emergency prerequisites and procedures even in the large South African central academic ED's. There are policies and recommendations in place but will most likely be limited to those centers with emergency medicine physicians. The latest South African emergency medicine specialty training programme has been described as "state of the art" and would challenge that found in longer-established programmes abroad.[24]

The training of emergency physicians and deployment to various settings across the healthcare system of South Africa would be essential in improving standards and emergency patient care. According to a World Health Organisation report that included South Africa, most preventable patient deaths were the result of inadequate clinical staff training and supervision, and a failure to follow policies or protocols. The placement of experienced emergency physicians in leadership positions in units across the country should improve teaching, protocols and basic standards of care. The private healthcare sector is a favorable environment for these trained specialists as resources are better and the systems efficient. The work environment is also more inviting compared to the resource-limited and overcrowded public ED's. As with the other medical specialists, the

public sector faces a challenge in retaining their specialist emergency physicians in this domain where their services and knowledge are sorely needed.[24]

2.4 Waiting times in the Emergency Department

Rauf and co-workers conducted a quality improvement study at a district hospital in Tshwane, South Africa, in 2006. A quality improvement team conducted 2 quality improvement cycles. A total of 150 waiting times of unstable and stable patients were evaluated. Long waiting times at public hospital EDs, and dissatisfaction with service, filter these patients to private facilities. They decide to risk personal financial strain to be assisted timeously in the private sector. The waiting time for an unstable patient at a public hospital is minimal and they are usually assisted immediately here. The frustration arises with stable, less urgent patients who require medical care, even admission, but unfortunately are larger in number.[25]

A prospective cross-sectional cohort study was conducted by Arkun and co-workers in an ED in Brooklyn, New York, of adult patients seen or waiting to be seen at 8pm over a 1.5-month period. They aimed to evaluate the intrinsic and extrinsic factors in the ED influencing “door-to-doctor’ time and time spent in the ED. The study identified the largest contributors decreasing patient flow in the ED as triage category, ED occupancy and the day of the week. Increased ED occupancy was found to be due to outflow obstruction. This “bottleneck” situation occurs due to delays in triage, the registration process, laboratory and radiology work and the shortage of physicians and nurses. This

results in an increased number of the patient's leaving the public hospital without being attended to and either seeking medical care elsewhere or absconding.[26]

A prospective cross-sectional cohort study conducted by Mahomed and co-workers[16], in 2006 investigates patient satisfaction at a secondary public-sector ED in New York, aiming to obtain information of the patient experience in the ED with the objective to improve the level of care. Their surveys have shown that even small measures such as increasing the level of security and comfort in the waiting room itself and clean toilet facilities could vastly improve patient satisfaction. ED personnel should educate patients about the prolonged wait at a tertiary or secondary institution which could be avoided if they attended a suitable clinic or primary healthcare facility. Most patients triaged as being in the green category or non-urgent can be seen by a generalist in a separate setting to take the load off the busy ED.[16]

Mohsin and co-workers conducted a follow-up study in Sydney, Australia in 2003 over a 4-month period, of 457 patients who were initially triaged, but left the ED without being seen by a doctor demonstrated that prolonged waiting time was the most common reason for patients leaving the ED without being seen. There was also a significant association between overcrowding in the ED and walkout of patients. Most of these patients were triaged as less urgent, highlighting the correlation between the rate of patients leaving without being seen and the triage category. The young patient, up to the age of 29, was also more likely to walk out than other patients.[27]

Cooke and co-workers conducted a cross-sectional survey in the Calgary Health Region, in Canada in 2002 provides an insight into patient expectations of ED waiting times. The results showed that patients want to be updated about every 30 minutes in the waiting room. They considered a reasonable waiting time for non life-threatening conditions before being taken to see the doctor to be 30 to 60 minutes, but also considered up to 2 hours acceptable if tests are started within an hour of arrival. Life-threatening conditions should be seen within 5 minutes. Almost two-thirds of the patients agreed that the most serious patients should be seen first. The acceptable total time spent in an ED up to discharge was considered to be 2 to 4 hours.[28]

2.5 Non-urgent patients in the Emergency Department

Large volumes of non-urgent patients in the ED places additional strain on the system. Honigman and co-workers conducted a retrospective, cross-sectional analysis of the 2006-2009 National Hospital Ambulatory Medical Care Survey in the United States. They compared resource utilisation of ED visits in all triage categories. They believed that reducing non-urgent ED visits could be a method to produce cost savings. The non-urgent patients visiting the ED are often considered “unnecessary” visits, where similar medical services could be provided elsewhere at a lower cost to the patient.[29]

A retrospective study conducted by Schull and co-workers in Toronto, Canada over a 1-year period in 2002-2003, investigated the extent to which patients presenting to EDs with minor conditions cause delays and contribute to crowding and concluded that large

volumes of non-urgent patients in an ED has a negligible contribution to the problem of overcrowding and long waiting times.[30]

Durand and co-workers conducted a study in France in 2006, which included semi-structured interviews in 10 EDs with 87 non-urgent patients and 34 health care practitioners. The study explored the reasons for patients with non-urgent complaints to come to EDs and ED health care practitioners' perception of "non-urgency". Patients chose to come to an ED for care as they are assured of rapid consultation at their convenience and they don't have to wait for an appointment at a general practitioner. A consultation in an ED also often bypasses the need for various appointments with specialist's due to the technical facilities available in an ED, with better overall fulfillment of health care needs. Patients perceive the resources to be better in an ED with investigative procedures at hand and specialist consultation a phone call away. Patients also use an ED for acute pain as management is quick and accessible.[31]

2.7 BRIEF OVERVIEW OF HEALTH CARE IN SOUTH AFRICA

2.7.1 Private health care

Rama and co-workers from the Centre for Actuarial Research, a research unit of the University of Cape Town, South Africa conducted a historical study in 2001 of trends in medical schemes in South Africa from 1974 to 1999. They reviewed annual reports of the Registrar of Medical Schemes. The earliest record of a formal medical scheme in South Africa dates back to 1889. There were records before this of friendly societies

considered to be the forerunners of formal medical schemes. There has been a decrease in the number of registered medical schemes, from 252 in 1974, in comparison to 160 in 1999.[32] The current number of registered schemes in 2016 stands at around 92.[33] There has been consolidation of schemes over the years. Membership numbers have also increased over time, from 0.99 million in 1974 to 2.28 million in 1999.[32] In 2016 there were around 8.8 million beneficiaries in total, with annual contributions amounting to R129.8 billion.[33] The benefits paid by medical aid schemes increased from 1974 to 1999 with an inflation and member number adjusted rate of 4.9% per annum. In 1974 most of these paid benefits went to medical specialists. By contrast, in 1999 medicines accounted for the greatest proportion of benefits.[32] In 2016, the majority of benefits were related to rising medication, private hospital care and specialist costs.[33]

Econex published a research note in 2013 which summarises the findings of a larger report looking at the South African private health care sector and linkages to the greater economy. The findings indicate that the private health care sector interacts with and greatly affects a number of other industries in the economy. The first Medical Schemes Act was tabled in 1967. The role of private health in assisting the government to fulfil its duty of providing quality health services to South African citizens has been questioned. Approximately half of national health expenditure in South Africa is spent in the private healthcare sector. This money is usually funded by medical aids and is not money that has been budgeted for the public health care sector. It has grown and risen to the stature it holds today in part due to the failure of the public health sector to address the

demand for quality health services by South African citizens. It is estimated that the private health sector provides services to 28-38% of the population. It involves many of the country's health care practitioners, namely 37% of general practitioners', 59% of the specialists, 38% of the nurses and many allied health care workers working in the private healthcare sector. This accounts for a large South African industry responsible for the funding, management and administration of these private healthcare facilities and providers. Also included in this industry are 25 open and 67 restricted medical schemes, and approximately 30 medical scheme administrators as well as health insurers. This provides employment to many and facilitates significant economic activity.[34]

Medical schemes are required to submit statutory returns to the Office of the Registrar of Medical Schemes. This body was set up and became functional, in mid-2000 in terms of the Medical Schemes Act No. 131 of 1998. The Council for Medical Schemes is a board consisting of a non-executive chairman, deputy chairman and 13 members. They were appointed by the South African minister of health. The council determines overall policy and supervises the massive private medical scheme industry. The day to day decisions and management remain the responsibility of the Registrar. Medical schemes need to submit relevant information including membership details, income statements, balance sheets as well as detailed information regarding the composition of the benefits that were paid to various parties, annually to the council.[32] It provides regulatory supervision of private health financing by medical aid schemes. The council protects the public by informing them of their rights as members and patients, and of medical

scheme obligations to the public. They address complaints by members of the public and ensure that medical schemes conduct business in compliance with the Medical Schemes Act. They also aim to improve the functioning of existing medical schemes. The council also interacts with the Minister of Health, advising him or her on regulatory and policy interventions that will assist in the attainment of national health policy objectives. In addition, technical assistance in major and strategic health reforms is provided, for instance with the current National Health Insurance reform.[33]

Morgan and co-workers published an article in The Lancet in 2016 which reviews the performance of the private sector health care and the implications for universal health coverage in Baltimore, USA. It was found that diagnostic accuracy, adherence to medical management standards or prescription guidelines, incidence of unnecessary procedures and standard diagnosis and treatment fared worse compared to the public sector. The lack of availability and service in the public sector creates a gap in service provision which the private sector fills. This is comparable to the health care situation in South Africa. Private general practitioners attend to patients who wish not to make use of busy public primary health care clinics but are willing to pay for the private consultation. Private hospital ED's attend to patients who choose to bypass the public system for care in a private unit at a relatively high cost. If the patient can no longer pay for further investigations, and management at, or admission to, the private facility, a public hospital is approached and the patient is transferred.[35]

In a newspaper article published in the Mail and Guardian in 2013, the author discusses the reasons behind the attendance of private medical facilities. There is general uncertainty about the level of care a patient would receive at a South African public healthcare facility or ED. This is unfortunately negatively influenced and shaped by the media, previous experiences and frustrations and communication within a community creating a disillusion that the care received will be sub-standard. This uncertainty persuades many patients to attend high-cost private facilities or ED's. Patients perceive private providers as superior because of shorter waiting times, friendliness and care, increased time with the doctors, cleanliness and appearance of facilities as well as better availability of staff and resources.[36]

Jacobsen and co-workers conducted a weighted logistic regression analysis of data from 22,959 South African household representatives who participated in the nationally-representative 2010 general household survey with the goal to examine national health care satisfaction rates. The patient's impression of quality care is based mainly on good interpersonal communication with the physician and influenced by their expectation of the visit to the health care facility. Service satisfaction is also influenced by education levels, cultural beliefs and socio-economic standings.[37]

Basu and co-workers conducted a systematic review in 2012, in the United Kingdom looking at the comparative performance of private and public health care systems in low- and middle-income countries across the world. Multiple peer-reviewed studies were

systematically collected through database searches, filtered and organised into six World Health Organisation health system themes. The review found the public sector to be less responsive to patients, lacked availability of supplies, lacked timeliness and hospitality towards patients. The review suggested that providers in the private sector more frequently violated medical standards of practice resulting in poorer patient outcomes. The private sector appeared to be less efficient than the public sector because of higher drug costs, perverse incentives for unnecessary testing and treatments, greater risks of complications and weak regulation. Yet the units are appealing to patients because of timeliness and better hospitality. Private EDs in both urban and rural settings are often also more geographically accessible. The review shows that the current data does not support claims that the private sector is more efficient or medically effective than the public sector.[38]

The World Health Organisation published a working paper in 2005 with the purpose to develop effective strategies in working with the non-state sector to achieve public health goals. They comment on the significant role the private sector plays in the delivery of health services as well as the provision of health-related resources in developing countries. The paper stated that the public often perceives the private sector to be more responsive to their preferences and are often more geographically accessible than public sector providers.[39]

The Department of Health has published a set of rules and tariffs for private health services and procedures performed in or out of hospital in consultation with the Council for Medical Schemes. This National Health Reference Price List acts only as a pricing guideline only for specialists, with most providers charging a fee far greater than the suggested one. This places much pressure on medical aids as tariffs are often above the recommended or suggested rate. The uninsured patient is expected to pay these tariffs when attending a private facility which places financial strain on these persons and households.[40,41] In an online article published in 2014, South African private healthcare medical procedures are described as some of the most costly in the world with patients paying more than many first world countries for MRI and CT scans.[42]

An online newspaper article published in 2017, authored by Erasmus, discusses the debate over National Health Insurance and medical aid schemes. Medical schemes themselves are not aimed to run for profit, but the increasing cost of private care at provider and health care facility level forces schemes to increase their fees annually to accommodate the private hospital profit-driven industry. There are no set rules, only guidelines as mentioned above, for charging of patients in the private sector, and this results in spiraling medical scheme contributions and costs for members. The private schemes are legally obliged to pay for the treatment of 270 conditions on the Prescribed Minimum Benefits list. In 2017 South African medical aid schemes announced double-digit contribution increases. This may influence many people to resign from medical schemes, thus increasing the burden on the public sector.[43]

Mannix and co-workers from Boston, USA conducted a retrospective cross-sectional analysis of ED visits using data from the National Hospital Ambulatory Medical Care Survey (1999-2008). The study aimed to determine whether insurance status was associated with the use of diagnostic testing or intervention in the consultation of children in the ED. This study showed the uninsured patient (child) presenting to a private ED often poses a challenge to the physician as their finances are often limited and there are restrictions on the diagnostic testing that can be done in the unit.[44] This is from personal experience also applicable in the South African private ED setting.

A review by Hadley, from the Urban Institute in America, published in 2003 of health services research over the preceding 25 years looks at the outcomes of the uninsured utilising private medical care and the influence on patients' health. Although the studies suffered from methodological flaws, there was a qualitative consistency finding that the uninsured patient received fewer preventative and diagnostic services. The uninsured patients were also more ill on diagnosis and received less therapeutic care.[10]

A study by Jackson, presents evidence from a major county hospital in the Mid-West, USA that the uninsured patients received less care than privately insured patients with similar diagnoses when coming to the ED for treatment. Nearly 40,000 ED patients were identified. The article was published in 2001. It showed that uninsured patients received less investigative care when presenting to a private ED and were also less likely to be

admitted to hospital. The uninsured patient had a lower discharge cost than the insured patient but once admitted the costs of both groups were similar.[45]

A study by Burstin and co-workers from Boston, USA, studied the effect of changes in health insurance on patients and their care. The results were published in Inquiry Journal in 1999 and from experience are applicable to the South African setting. They showed that patients who lost their insurance were more likely to report that they had no primary care provider, lower likelihood of vaccine use and were less likely to have recommended follow-up care. The loss of insurance had a measurable effect on access to health care. Out-of-pocket expenditure by households has been greatly underestimated and is difficult to measure. Many patients can no longer afford to be on medical aids and are forced to abandon their medical schemes. They are reluctant to rely on the public health system after being accustomed to the well-resourced and easily accessible private health care sector. These patients will continue to visit the private ED's. They are less likely to follow up at their primary care provider, resulting in poor follow-up care.[46]

2.7.2 Public health care in South Africa

The public health sector delivers services to the majority of South Africa and is funded by about 40% of all state expenditure. However, it remains stretched and under-resourced in places as well as suffering from poor management and a deteriorating infrastructure. Health-sector funding comes from the South African National Treasury.

There is high expenditure on health in South Africa.[47] The 2017/18 budget issued by the National Treasury aims to spend R187.5 billion on health care in South Africa. This total is paid to district health services (R83.6 billion), central hospital services (R35.9 billion), provincial health services (R32.3 billion), other health services (R25.8 billion) and facilities management and maintenance (R9.9 billion).[48] In 2017 total health expenditure in South Africa was at 8.797% of gross domestic product according to the World Bank collection of development indicators, a value far above the World Health Organization recommended 5%. Total health expenditure is defined as the sum of public and private health expenditure.[49] Yet despite this percentage, health outcomes remain poor compared to similar developing, middle-income countries.[47]

A revised draft of the South African Health Charter was released on 28 October 2005. The Charter aims to facilitate and effect transformation of the health sector in the following areas: access to health services, equity in health services, quality of health service and broad-based black economic empowerment. Access to health care addresses those without adequate access to health services due to physical, geographical, communication, sociological, financial and sociological barriers. Equity in health care ensures equal access to equal care for equal need and resources which are efficiently and effectively utilised. Quality in health services achieves the best health outcomes with the resources available. Broad based black economic empowerment involves significant changes in the levels of ownership, concentration and representation of Black persons within the South African health sector.[50]

There are 4200 public health facilities in South Africa. The World Health Organization guidelines recommend 10 000 people per clinic. South Africa accommodates approximately 13 718 patients per clinic. The National Health Laboratory Service serving the public healthcare sector is the largest pathology service in South Africa and serves 80% of South Africans.[47] The majority of interactions with patients in the public health system occur at the primary care level by nurse-led clinics or day hospitals. Here there is limited access to laboratory or radiological investigations. The day hospitals do have a functional ED but no overnight facilities. The public district hospitals assist with most ED cases and admissions. They are staffed by non-specialist medical officers and specialist family physicians who cover the various disciplines including emergency care in the ED. Here basic investigations and admissions are possible. They refer complicated cases to the regional hospital where specialists are based. The highest referral levels are the central hospitals, assisting less than 2% of the total population. These facilities are staffed with specialists and subspecialists.[22] Some of the larger South African ED centres have a separate trauma section. This accommodates the large numbers and allows better specialist trauma care.[24]

2.7.3 Doctor shortages and inequalities

In 2012 there were 165 371 qualified health practitioners in the public and private health care sectors. This number included 38 236 doctors and 5560 dentists. The corrected doctor-to-population ratio, factoring in the majority of general practitioners working in the private sector, is 1 doctor for every 4219 people.[47] In 2013, 56% of doctor posts were vacant and 46% of nursing jobs unfilled in the public sector. These alarming figures are

based on a document compiled by the Department of Health based on its own assessment of healthcare needs in South Africa. Most shortages are in rural areas where few healthcare workers are inclined to work in spite of higher salaries and rural allowances.[51,52] In 2015 in the public sector, there were 11.1 medical specialists per 100 000 population, 30.3 medical practitioners per 100 000, 68.6 enrolled nurses per 100 000 and 151.3 professional nurses per 100 000.[47]

The Hospital Association of South Africa states there are only 25 state or public-sector doctors and 92 private doctors per 100 000 people compared to the world average of 152 per 100 000. A recent Econex study for the Hospital Association of South Africa revealed that up to 17% of newly qualified doctors may emigrate. Between 2004 and 2009 17% of doctors who qualified did not report for community service. These doctors leave the country for Canada, New Zealand, Australia, the United States of America and the United Kingdom. Eighty percent choose not to work for the state due to poor working conditions, lack of equipment and medical provisions and a heavy workload. The deterrent is reported to be the poor working conditions and not remuneration.[51,53] The Econex report suggests that the private sector can help in strengthening South Africa's medical workforce by assisting government to achieve their stated health care objectives. The accreditation of private medical colleges can allow a greater number of doctors to be trained with practical training at private hospital facilities.[51]

2.7.4 National Health Insurance

The South African government has placed focus on the deterioration of the public health system and a plan is in place to rebuild and transform. These plans include the implementation of a National Health Insurance (NHI) scheme to cover all South Africans, uniting public and private healthcare.[54]

NHI is a government initiative to enable everyone in South Africa to have equal access to quality healthcare. There will be a massive reorganization of the current health care system to enable all South Africans to have equal access to health care services including reproductive health care. Implementation of NHI aims to eliminate out-of-pocket payments with a long term increased disposable household income. NHI will ensure that the use of health services in South Africa does not result in financial hardships for users.[55,56,57,58] Public health facilities are being upgraded and improved for implementation of the NHI scheme which will aim to improve service provision and health care delivery to all South Africans regardless of employment status or ability to contribute to the NHI fund.[47]

The implementation of NHI is to occur in three phases over 14-year period beginning in 2012.[47,55] The first phase, 2012 to 2016 was developed to strengthen the current service delivery platform, upgrading and improving current health care and resources in the public health sector. Primary health care is being revisited to improve timely access to care and to promote health and prevent disease. The first phase also aims to

transform central hospitals into national assets to act as the support to lower levels of care by promoting good governance and academic excellence. The second phase, 2017 to 2021, will have the population register for NHI and individuals will be issued a NHI card. This will be linked to the Department of Home Affairs. Certain groups such as the aged, adolescents, children, orphans, the disabled, women as well as the rural communities will be prioritised. A transitional fund will be established with which to purchase primary health care services from accredited public and private providers. Later, in phase 2, certified public hospitals, emergency medical services and national health laboratory services will be contracted for services by the NHI fund. Private general practitioners will be contracted to work at the primary health care level. Children with physical barriers to learning identified in the initial phase of the NHI will be seen by contracted audiologists, speech therapists, oral hygienists, occupational therapists, psychologists, physiotherapists and optometrists. In the later part of phase 2 the Medical Schemes Act will be amended to include the NHI. The third and final phase will be implemented over the last four years 2022 to 2025. The focus will be on the functionality of the NHI fund. Accredited private sectors at higher levels (private hospitals and specialists) will be contracted and the introduction of a mandatory prepayment by NHI for those eligible.[55,57,58] It also aims to provide financial risk protection against health-related catastrophic expenditures.[56]

The health minister states that the purpose of NHI is not to destroy the private health care sector but rather for more South Africans to have access to quality health care and that the resources in private healthcare should be available to everyone. However,

recently the South African Health Professions Council president stated that South African private medical schemes should be abolished as they stand in the way of the proposed NHI scheme. The issue remains the funding of the proposed NHI with

R375 billion needed by 2025 to initiate NHI, in all likelihood from increases in VAT, the introduction of a payroll tax and a surcharge on taxable income.[43]

In an online article published in News 24 in June 2017, the South African Health minister, Dr. Aaron Motsoaledi stated that the NHI will be compulsory for all South Africans and that the white paper was approved by cabinet and will be gazetted. NHI will further be fully operational by 2025.[59,60] There was a functional website initiated in 2017 with all the policies, documents, information and research concerning NHI available to the public.

2.8 The uninsured patient in the Emergency Department

Baillargeon and co-workers conducted a retrospective cohort study of 17110 consecutive patients without medical insurance presenting to the ED in Galveston, Texas. They have observed an increase in the number of uninsured Texas residents who use the ED as their primary health care provider. The uninsured group accounted for 29.5% of the total number of patients seen during the study period. There are surprisingly few descriptive studies of uninsured ED users. These can assist the ED to develop policies and allocate resources to manage overcrowding.[61]

Weber and co-workers investigated whether patient insurance status is associated with an increase in ED visits in the United States. They used the national Community Tracking Study Household Surveys. They found that between 1996 and 2003 ED visits in the United States rose from 90.3 million to 113.9 million visits annually. The results however provided strong evidence that visits by the uninsured patients during this period did not affect the overall increase. There is a perception that the poor and uninsured are overwhelming EDs in the United States. The study suggested that the increase in ED use may be due to the lack of ready access to primary care and other structural problems in the health care system.[62]

Mcdonald and co-workers from Pfizer looked at the profile of uninsured persons in the United States in 2008. They found that 16% of the estimated 300 million population are medically uninsured. The majority of the uninsured (59%) are under the age of 35 with those aged between 18 and 34 least likely to have insurance. Five percent of hospitalisations are by uninsured patients. Uninsured adult patients are 5 times as likely as insured adults to have no usual place of care and make more use of emergency rooms.[63]

Bunn and co-workers conducted a medical chart audit to determine demographic and diagnostic information about the medically uninsured patient population in a community hospital in Toronto, Canada. There was no significant difference in the mean age and

sex distribution of the insured and uninsured. They found that HIV was more prevalent in the uninsured group and that they lived in lower-income areas.[64]

A report published by the Community Health Improvement Partnership used data from the Florida Health Insurance Study focusses on the profile of the uninsured in Charlotte County, United States. In 2004 the estimated percentage of uninsured patients in Charlotte County was 21.8%. This figure for the United States was 20.5%. They noted that between 1994 and 2004 ED visits have increased by 18%. The data from one of the EDs in Charlotte County show that the uninsured represent about 14% of all ED visits. The local hospitals report that the uninsured patients seek treatment at their local ED because they do not have a regular medical provider.[65]

Chapter 3: Methodology

The aim of this study is to determine the patient profile of uninsured patients presenting to a private emergency department over a 3-month period, from 1 September 2014 to 30 November 2014.

3.1 Study Objectives

- To describe the number and frequency of uninsured patients presenting to the private ED over the study period.
- To describe the number of uninsured patients presenting to the private ED over each month individually over the study period.
- To describe the provisional diagnosis of uninsured patients presenting to the private ED over the study period.
- To describe the priority of uninsured patients presenting to the private ED according to triage protocol over the study period.
- To describe the demographics (gender, age) of uninsured patients presenting to the private emergency department over the allocated period.
- To describe the time the uninsured patient presenting to the private ED spends in the unit from arrival in the emergency department to transfer, admission or discharge over the study period and to describe the outcome of the consultation.
- To describe the reasons for delay in transfer when encountered of uninsured patients presenting to the private ED requiring admission to public facilities over the study period.

- To include a control group which will include the time insured patients spend in the unit from arrival in the emergency department to admission as a comparator for the time uninsured patients with an identified delay in transfer spend in the unit. The control group will include insured patients presenting to the private ED over the study period.

3.2 Study design

The study is a retrospective, cross-sectional study, reviewing patient data of uninsured patients presenting to a private ED in Tshwane over an allocated 3-month period.

3.3 Study Site

The study was conducted on data from patients attending a private hospital ED in Tshwane. It is a level 2 trauma ED. The unit has a triage area and 6 cubicles for examination of patients, initial management and procedures. There is an additional area with 4 beds used for patients waiting for results after examination or for overflow if the unit is very busy. The resuscitation area has 6 beds including a paediatric bay. This area also has an incubator and neonatal/infant heated bed. There are 2 specialised emergency physicians as well as a number of general practitioners working in the unit.

3.4 Study Population

The population included in the study was any uninsured patient presenting to the private ED. There were no exclusion criteria. All ages and genders were included.

3.4.1 Sample Size

The study aimed to collect a convenience sample of 350-400 consecutive patients. After review of the ED registers it was determined that 3 months would be adequate to achieve this sample size.

3.5 Study period

The data collection was done over a period of 3months, from 01 September 2014 to 30 November 2014.

3.6 Ethical considerations

The study was approved by the regional Ethics Committee – the Committee for Research on Human Subjects (Medical) of the University of the Witwatersrand (Appendix 1). The study was approved by the Post-Graduate Committee of the University of the Witwatersrand, Faculty of Health Sciences.

Permission to access the database from patient records was granted by the manager of the private hospital and manager of the emergency department (Appendix 2 and 3). The patient identifying information remains anonymous and no contact was made with any patient.

3.7 Data Capturing

The existing patient register was searched to identify the patient file numbers of the uninsured patients presenting to the private ED during the period 01 September 2014 to 30 November 2014. The medical aid status was identified on the patient sticker which was searched manually in the patient register book. The electronic formatted files of the identified group of patients were retrieved from the record department managed by a private filing company. The files were assessed and specific demographic and clinical data was extracted and recorded on a data collection sheet (appendix 4). The following data was collected: age, gender, priority of the patients according to triage protocol, provisional diagnoses, outcomes of the ED visit, time that a transferred patient spent in the unit before transfer, admission or discharge and reasons for delay in transfer if experienced. The number of patients over the entire period as well as over each individual month was recorded and analysed. The data was summarised, analysed and interpreted to reach a rational conclusion. Patient confidentiality was maintained throughout the research process. The data was collected and evaluated by a single researcher, the author of this report. The patients identified for the study were given numerical values and their identification remained anonymous. This identification number was used on the data collection sheet and the data can therefore not be linked to a specific patient name. The data was collected in a private room in the ED.

The retrospective nature of this study made data collection entirely dependent on what was found in the patient records and file notes. Missing files proved to be a problem. To minimize missing data, the researcher obtained demographic information of patients with files missing from the patient register in the ED. The time the patient was in the

unit, the provisional diagnosis, outcome of visit, as well as the triage category could be identified in the register. The detail about delays in transfer found in the doctor and nursing notes was not identified in those with missing files. To minimise the “bias” of this missing data, the patient register was reviewed and the “time in the unit” and “outcome of the visit” was identified. The researcher could therefore identify those patients transferred to government facilities and narrow the possible missed “delay in transfer” patient numbers.

3.8 Data Analysis

Categorical data including demographics (age and gender), provisional diagnosis, outcome of the consultation and the priority of patients according to triage protocol were summarised using tables with frequencies and percentages. Bar charts were used to display this categorical data. Measured data was summarised with the use of means, medians and ranges. The statistical method used was descriptive. Calculations and tabulations were done using Microsoft Excel® (Microsoft Corp, Redmond, WA, USA) software. The frequency of the total and monthly patient numbers and visits was described. The patient numbers and visits were also recorded as a percentage of the total number of all patients seen in the unit as well as visits to the ED. The time the uninsured patients spent in the unit was described. Reasons for delay in transfer were described and summarised.

Chapter 4: Results

4.1 Uninsured patient visits to the emergency department (n=503)

The total number of ED visits of uninsured patients including follow up visits over the 3-month period was 503. There were 172 (34%) ED visits in September, 177 (35%) ED visits in October and 154 (31%) ED visits in November. The difference between the total number of uninsured patients (sample size) attending the private ED (n=427) and the total number of ED visits (n=503) by uninsured patients over the 3-month period is accounted for by follow up visits.

During the month of September 2014, 126 files of uninsured ED patients were retrieved. The total number of ED visits among uninsured patients during September was 172. The difference is 46. There were 9 patients returning for 1 follow up visit, 5 patients returning for 2 follow up visits and 3 patients returning for 3 follow up visits. There were 18 patient files (10%) not retrieved for September 2014.

During the month of October 2014, 117 files of uninsured ED patients were retrieved while the total number of ED visits among uninsured patients during October was 177. The difference is 60. There were 12 patients returning for one follow up visit, 4 patients returning for 2 follow up visits and 2 patients returning for 3 follow up visits. There were 34 patient files (19%) not found for October 2014.

The total number of files of uninsured patients visiting the ED retrieved during the month of November 2014 was 94 and the total number of ED visits among uninsured patients during November was 154. The difference is 60. There were 13 patients returning for 1 follow up visit and 3 returning for 3 follow up visits. There were 38 patient files (24.7%) not found for November 2014. There were in total 90 files not found in the electronic storage facility. The data for the patients whose files were not found was obtained from the patient register.

There were a total (insured and uninsured) of 2302 ED visits in September 2014. One hundred and seventy-two (7.5%) were by uninsured patients. There were 2189 ED visits in October 2014 with 177 (8.1%) by uninsured patients. There were a total of 2014 ED visits in November 2014 with 154 (7.6%) by uninsured patients. The total number of ED visits (insured and uninsured) was 6505. Five hundred and three (7.7%) of the total number of visits to the ED were by uninsured patients. The total ED visits include follow up visits.

When considering all ED visits, including follow up visits, there were 327 (65%) patients seen on weekdays (Monday to Friday) and 176 (35%) patients seen over the weekend (Saturday and Sunday) over the 3-month period. On average 5.0 patients were seen per day on a weekday while 6.8 were seen per day on the weekend.

4.2 Follow up visits among the uninsured in the emergency department

There were 28 follow up visits in September 2014, 26 follow up visits in October and 22 follow up visits in November. There were a total of 503 visits by uninsured patients over the 3-month period as mentioned with follow up visits accounting for 76 (15%) of this total. The follow up visits of uninsured patients account for 3% of the total number of ED visits over the 3-month period.

4.3 Total number of uninsured patients attending the emergency department (study sample size (n=427))

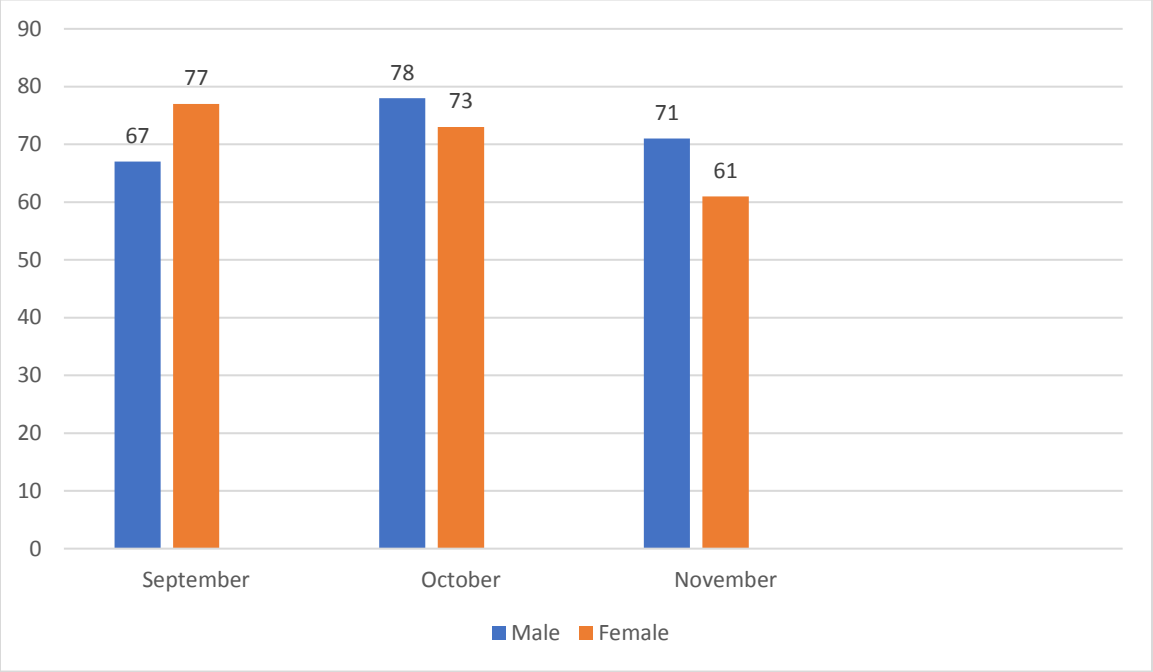
The total number of uninsured patients attending the private ED over the 3-month period or study sample size is 427. One hundred and forty-four (34%) were seen in September, 151 (35%) were seen in October and 132 (31%) were seen in November 2014. The total number of all insured and uninsured patients seen over the 3 months was 6186. The uninsured account for 427 (6.9%) of this total.

4.4 Demographics

4.4.1 Gender

There were 218 male patients and 209 female patients seen in the unit over the 3-month period. Fifty one percent of patients were male. SD 6.36 (0.005).

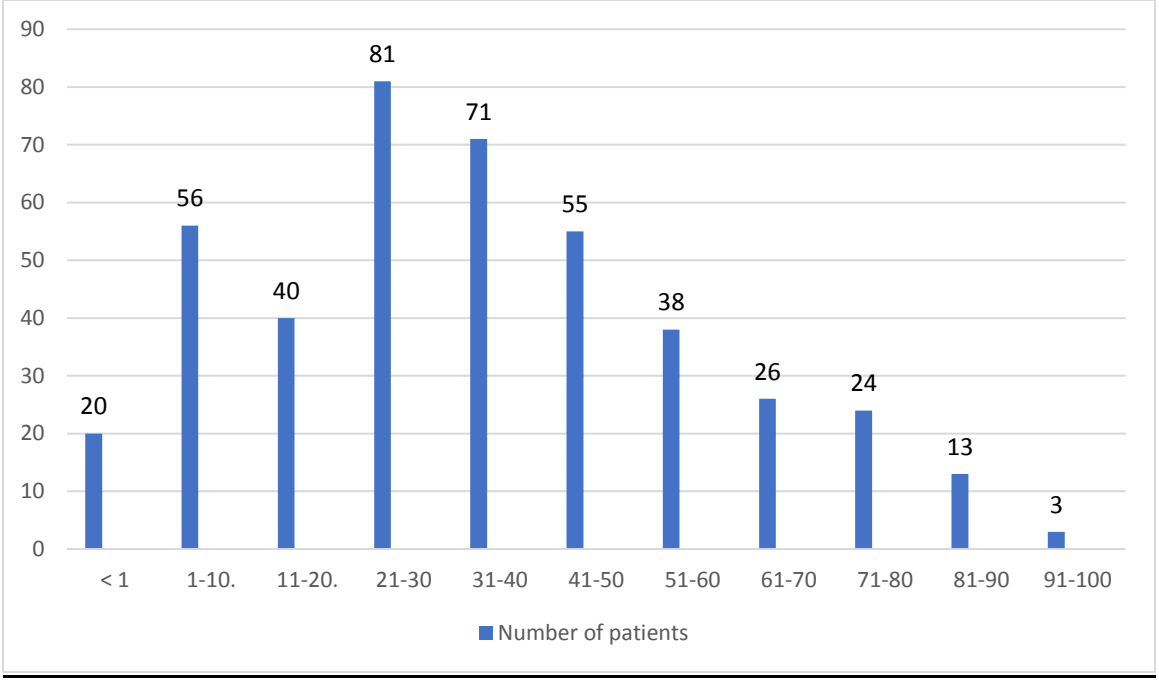
Figure 1: The number of uninsured patients seen in the ED over the study period according to gender



4.4.2 Age

The youngest patient was a newborn infant delivered in the unit and the oldest patient was 100 years old. There were three patients over 90 years and 20 patients under 1 year. The greatest concentration of patients was between the age of 21 and 40 with the highest number between 21 and 30 years (figure 2).

Figure 2: Age profile of uninsured ED patients over the study period



The mean age for all the patients seen over the 3-month period is 35.2.

4.5 Emergency department visit outcomes

The outcomes of patient visits to the ED over the 3-month period are shown in table 1. Follow up visits are not included and only first ED visit outcomes are described. Three hundred and thirty-six (79%) were discharged, 53 (12%) were transferred to a government facility, 28 (7%) were admitted to the private facility and 10 (2%) refused hospital treatment.

Table 1: ED visit outcomes of uninsured patients over the study period

Month	Discharged	Transferred to government facility	Admitted to private facility	Refused hospital treatment
September	109	17	13	5
October	117	21	10	3
November	110	15	5	2
Total	**336 (79%)**	**53 (12%)**	**28 (7%)**	**10 (2%)**

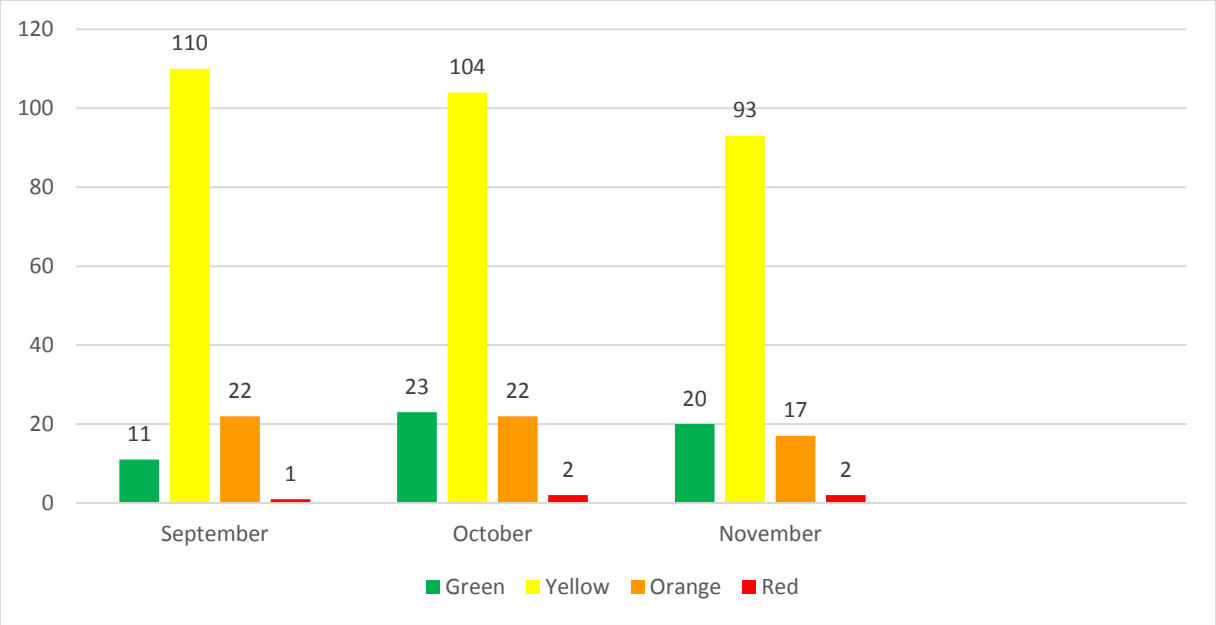
4.6 Emergency department triage categories of uninsured patients

The triage categories of the 427 patients seen over the 3 months are shown in table 2. The triage categories of the individual months are shown in figure 3. Follow up visits were not included.

Table 2: Triage categories of uninsured patients over the study period

Triage Category (Priority Level)	Total Number of Patients
Green (4)	54 (13%)
Yellow (3)	307 (72%)
Orange (2)	61 (14%)
Red (1)	5 (1%)

Figure 3: Triage categories of uninsured ED patients over the study period



4.7 Time spent in the emergency department

The time spent in the unit is defined as when the patient is first seen or triaged until the patient physically leaves the unit as a discharge, transfer or admission. The mean time in the unit for uninsured patients in minutes for September 2014 is 149 minutes, the mean time for October 2014 is 133 minutes and the mean time for November 2014 is 139 minutes. The mean time in the unit for the total 3 months is 139 minutes.

Table 3: Mean times uninsured patients spent in the ED over the study period

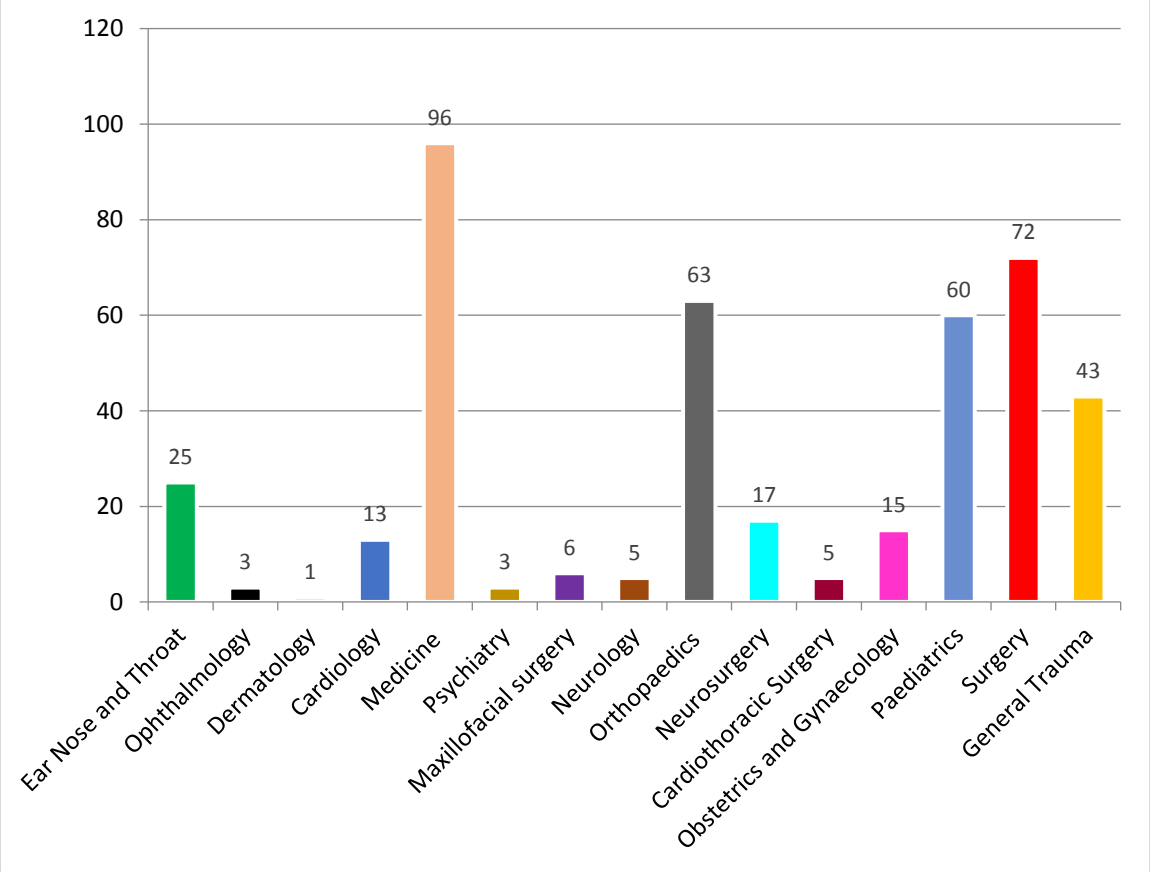
Month	**Mean time in unit (minutes)**	**Standard deviation (minutes)**
September 2014	149	103.4
October 2014	133	92.64
November 2014	139	123.19

4.8 Provisional diagnosis of uninsured patients in the emergency department

The majority of patients were provisionally diagnosed with medical, surgical or orthopaedic conditions (figure 4). The most common medical condition was acute gastroenteritis (n=21). The most common surgical condition was gastritis (n=15) and the most common orthopaedic condition was a soft tissue injury to the ankle or knee (n=15). There were 25 ear, nose and throat conditions, mostly upper respiratory tract infections and tonsillitis. Thirteen patients presented with cardiac complaints with 1 urgent ST segment elevation myocardial infarction. There were 2 ophthalmology, 1 dermatology, 3 psychiatric, 5 neurology, 6 maxillo-facial and 5 cardiothoracic surgery cases. There were 17 neurosurgical cases. Obstetrics and gynaecology accounted for 15 patients. The most common gynaecological condition was a threatening miscarriage (n=6). There was 1 normal vaginal delivery in the unit. The patient was booked at a government facility but presented to the ED fully dilated. There were 60 paediatric cases (excluding general trauma cases). The most common condition was an upper and lower respiratory tract infection (n=18). There were 43 uninsured patients who presented with general trauma. There were 30 patients with lacerations and 8 patients with dogbites at various

anatomical sites. The provisional diagnosis list is included in the appendix (see appendix 5).

Figure 4: The medical and surgical disciplines of the provisional diagnosis of uninsured ED patients over the study period



4.9 Transfer delays of the uninsured in the emergency department

Fifty three patients were transferred to a government facility. Twenty patients were delayed in the transfer process (table 5). The patients with a delay in transfer to government facilities were identified by the comments in the physician and nursing notes. The notes were very clear about these delays in the files that were retrieved but

there could be a missed ‘delay in transfer patient’ if there was no comment made in the file or in one of the files not retrieved.

Table 4: Uninsured patients transferred to government facilities without an identified delay in transfer (n=33), diagnosis and time in the private ED unit over the study period

Diagnosis (sample size)	**Mean time in unit (SD)-mins**		**Time in unit-mins**
Pneumonia (2)	101.5 (4.95)	Community acquired pneumonia Atypical Pneumonia	98 105
Congestive cardiac failure (3)	118.3(3.51)	Congestive cardiac failure/digoxin toxicity Congestive cardiac failure Congestive cardiac failure	115 122 118
Fractures (7)	115.1(19.2)	Femur neck fracture Femur fracture Tibial plateau fracture Bimaleolar ankle fracture Distal radius fracture Calcaneous fracture Open thumb fracture	130 125 95 127 109 135 85
Peptic ulcer disease (2)	104(15.60)	Perforated peptic ulcer Peptic ulcer disease	93 115
Cholcecystitis (2)	150(11.30)	Cholecystitis/gallstones Cholecystitis/gallstones	142 158
Strangulated inguinal hernia (2)	116.5(9.18)	Strangulated inguinal hernia Strangulated inguinal hernia	110 123
Appendicitis (1)	112		112
Gunshot wound abdomen and knee	127		127
Base of skull fracture/cerebral oedema	145		145
Pulmonary embolus	85		85
Non-ST segment elevation myocardial infarction	125		125
Septicaemia	94		94
Parasuicide/paracetamol overdose	84		84
Cerebrovascular accident	102		102
Chest pain	128		128
Normal vaginal delivery	92		92
Newborn	92		92
Ovarian hyperstimulation syndrome	138		138
Paediatric lower respiratory tract infection	68		68
Paediatric bowel obstruction	86		86
Neonatal jaundice/sepsis	75		75

Table 5: Uninsured patients transferred to government facilities with an identified delay in transfer (n=20), reason for delay in transfer, time in the private ED unit and diagnosis over the study period

Diagnosis (sample size)	**Mean time in unit (SD) (mins)**		**Time in unit (mins)**	**Reason for delay in transfer**
Hepatitis (2)	296(57.99)	Hepatitis Hepatitis/liver dysfunction	337 255	No medical ward beds available in a government facility Private quotation requested at private facility/could not pay the deposit required
Small bowel obstruction (2)	480.5(234.5)	Small bowel obstruction Small bowel ileus/ gallstones	246 715	No general surgery ward beds available in a government facility
Fractures (4)	342.5(134.51)	Distal radius fracture Bimaleolar ankle fracture Femur neck fracture Humerus fracture	190 270 470 440	Private quotation requested at private facility/could not pay the deposit required No orthopaedic ward beds available in a government facility
Renal calculi (1)	185		185	No urology ward beds available in a government facility
Chest pain/pulmonary tuberculosis (1)	290		290	No medical ward beds available in a government facility
ST segment elevation myocardial infarction (1)	423		423	No cardiology high care beds available in a government facility
Syncope (1)	490		489	No medical ward beds available in a government facility
Digoxin toxicity (1)	300		300	No medical high care beds available in a government facility
Serotonin syndrome (1)	220		220	No medical ward beds available in a government facility
Hypoglycaemia (1)	310		310	No medical ward beds available in a government facility
Gastric carcinoma/ Dehydration (1)	320		320	No general surgery ward beds available in a government facility
Neck abscess (1)	231		231	Government emergency services delay
Upper gastrointestinal bleed (1)	289		289	No general surgery high care beds available in a government facility
Haemorrhagic cerebral contusion (1)	280		280	No neurosurgery high care beds available in a government facility
Deep finger laceration (1)	132		132	No orthopaedic ward beds available in a government facility

The mean time in the unit for uninsured patients with an identified delay in transfer was 319.6 minutes.

The next table (table 6), tabulates the insured patients in the private ED over the 3-month period who were transferred to other private facilities. The reason for these transfers include shortage of beds at the primary hospital, patient request, medical aid admission requirements at a certain facility and patients known to specialists at other facilities who accept to take over care at their practicing hospital. This table shows comparative times for transfers in the private healthcare setting.

Table 6: Insured patients transferred to other private facilities (n=15), diagnosis, time in the ED and reason for delay in transfer if present over the study period

Diagnosis	**Time in unit (minutes)**	**Delay in transfer (yes/no) and reason for delay**
Non-ST elevation myocardial infarction	147	No
Congestive cardiac failure	234	Yes: No beds at primary hospital and a general bed shortage at other private facilities
Community acquired pneumonia	126	No
Distal radius fracture	95	No
Syncope	104	No
Cerebral contusion	123	No
Paediatric bronchopneumonia	55	No
Paediatric pneumonia	68	No
Paediatric gastroenteritis	58	No
Acute cholecystitis	116	No
Delirium/urinary tract infection	135	No
Chest pain	96	No
Peptic ulcer disease	128	No
Cerebrovascular accident	145	No
Acute gastroenteritis and dehydration	118	No

Chapter 5: Discussion

5.1 Limitations

The retrospective nature of this study made data collection entirely dependent on what was in the records and notes. Missing and incorrect data proved to be a problem. There were files that were not retrieved from the electronic database (n=90). The data regarding these patients was obtained from the patient register.

The patients with a delay in transfer to government facilities were identified by the comments in the physician and nursing notes. The notes were very clear about these delays in the files that were retrieved but there could be a missed ‘delay in transfer patient’ if there was no comment made in the file. This category patient could also have been missed because of the files that were not retrieved from the electronic database. There are patients who are insured but chose to be seen in the ED as uninsured and pay cash. These patients may be among the uninsured numbers as there is no information in the records to identify their medical insurance status.

5.2 Discussion of results

There has been, from work experience, observation and discussion with emergency physicians, an increase in the number of uninsured patients attending private ED’s in South Africa. Limited data is available regarding the numbers and demographics of uninsured patients attending private ED’s in South Africa. The study looked at the

patient profile of uninsured patients attending a private ED over a 3-month period in 2014. The study did not aim to investigate the change in the number of patients over time.

The ED in the study is a level 2 trauma centre. A level 2 trauma centre is defined as a hospital that is able to provide initial definitive trauma care regardless of the severity of the injury and with 24-hour medical cover for general as well as the common specialities. Complex injuries requiring advanced and extended surgical care may be transferred to a level 1 trauma centre. Guidelines published in the South African Medical Journal in 2011 revise the Trauma Centre Criteria of the Trauma Society of South Africa. Four levels of trauma care facility are outlined. The hospital in this study was classified but not accredited as a level 2 trauma centre.[66]

The number of uninsured patients, 427 (6.9%) seen in the private ED over the study period is important if one takes into account the time and resources involved with each patient and visit but this number was anticipated to be higher on initiation of the study. This could be due to the perceived increased time some of the uninsured patients spend in the unit, the frustrations involved in transferring them to appropriate facilities and the diagnostic and administrative challenges to the physician.

The study by Baillargeon and co-workers in Galveston, Texas, observed an increase in the number of uninsured Texas residents who use the ED as their primary health care

provider. The uninsured group accounted for 29.5% of the total number of patients seen during the study period.[61] This is higher than the value observed in this study (6.9%).

In the report about the profile of the uninsured in Charlotte Country, Florida, United States it was observed that from 2003 to 2005, 14% of visits were by uninsured patients. This is also higher than the value observed in this study (6.9%).[65]

The highest number of insured and uninsured patients were seen in October and the least in November. A possible reason for these figures could be that it is nearing the end of the year and medical aid funds are exhausted among the insured patients resulting in financial constraints. They may decide not to attend the ED and visit a general practitioner at a lower cost. It is also the month before the December vacation and patients could be trying to save on costs.

There were many follow up visits by the uninsured patients in the ED. These visits accounted for 15% of the total visits among uninsured patients and 3% of the total visits in the ED over the 3-month period. The ED where the study was done does not require a patient to pay for a follow up visit if within 24 hours of the initial visit. The follow up visits take up a significant amount of time in the ED and one can question if these visits are all essential. The reasons for follow up range from a necessary indication, to a physician asking the patient to return to review if there is an improvement of the clinical condition in cases of uncertainty. The physician is often not able to do a full workup on

an uninsured patient due to financial constraints and then opts to manage the patient and have them return within 24 hours for review. A review that may not be necessary if the patient was insured and fully worked up on the initial presentation. The time that a patient spends in the ED for a follow up visit could also be prolonged resulting in delays but this study did not address these details and a possible follow up study could evaluate this.

A retrospective study completed in Nebraska, in 2004 used a national database to compare ED utilization and acuity on weekends compared to weekdays. They concluded that in Nebraska, EDs see to a greater number of low-acuity patients on weekends than on weekdays.[67] The situation appears to be similar in the unit where the study was done. The average number of uninsured lower acuity patients seen in the ED was highest over the weekend (Saturday and Sunday) in comparison to the numbers in the week. The reason for this could be convenience as the patients are occupied at work in the week. There are possibly a few patients who are visiting the ED over the weekend in hope of being booked off from work the following week. The administration fees are higher over the weekend as it is after hours. The radiology department also charges an additional after-hour fee. Despite these factors the average visit numbers are higher over the weekend.

There were more males seen (n=218) over the 3 months in comparison to female patients (n=209). The totals are however very similar with only 2% difference between

the two genders. The Texas study also observed no significant gender difference.[61] It was noted that there were relatively few obstetric and gynaecological cases (n=15) which is usually a common presentation to the ED and one would have expected more of these cases with resultant higher female totals. The reason could be that there are two public hospitals in close proximity to the private ED, a district and an academic institution with adequate gynaecological and obstetric care. The obstetric patients in the public sector are also booked to give birth at a particular hospital or clinic and encouraged to present to these facilities if there are any problems.

The age of uninsured patients seen in the ED over the 3-month period ranged from a newborn to a 100-year old patient. There were fewer patients than expected under the age of 1 (4.7%). The reason could once again be the district and academic facilities in close proximity to the private ED where infants are timeously attended to. As expected, the majority of patients were between the ages of 21 and 40 (35.6%). The disease profile of these patients featured mostly orthopaedic cases and trauma related cases. These cases were less complicated in nature with a shorter expected stay in the unit. The patients over the age of 60 presented mostly with medical, cardiology and surgical complaints. Thirty nine of the 53 patients that needed to be transferred to the government facility were over the age of 40 and 18 of the 28 patients requiring admission to the private hospital were over the age of 40. The patient numbers and load on the unit are highest between the ages of 21 and 40 but due to disease profile, the older patients also bring more complications and take up more time even though the numbers are less. The Charlotte County report showed the majority of patients (56%)

were under the age of 18.[65] In the Texas study the majority of patients were between the age of 18 and 49.[61] The units' management team can therefore also take into account the age of the patient when planning and accommodating delays and managing anticipated problems.

There were 10 patients who refused hospital treatment. All of these patients required admission to hospital as decided by the physician on duty but could not afford the cost of admission in the private facility. They however also refused to be transferred to and admitted at a public hospital. The reason for the refusal to move to a public hospital could be due to a previous negative experience, fear or uncertainty of the care one would receive. These patients opted for treatment at home and were followed up in the unit. This is not the ideal and places much stress on the treating physician. The majority of the patients were discharged from the unit with a number of follow up visits as mentioned. There were 53 patients transferred to government facilities for admission. This is an average of 17 per month. These figures could assist the unit in future planning the possible transfers out of the unit as well as admissions to the private hospital.

Weiner's article which discusses the dilemmas physicians face when patients cannot pay for medical costs is relevant in the South African private ED setting. The patients are often not able to pay for all the necessary tests, procedures and admissions required.[17] This will result in many unmet expectations and reactions as mentioned in

Lateefs literature review.[15] The patients are left with large medical bills or are transferred to a government facility for further workup or care.

Triage is the process whereby patients are sorted into different priority groups according to their degree of illness or injury. The private ED in this study uses the South African Triage Scale, a scientifically derived triage tool. There are 5 triage groups identified, each with a colour identification. Red patients should be seen immediately and orange patients should be seen within 10 minutes. Yellow patients should be seen within 60 minutes and green patients within 240 minutes. The deceased patient is categorised blue.[68] The private ED in the study has a registered nurse trained in triage attending to the patients. The red and certain orange patients are taken to the resuscitation area immediately and triaged by the trauma sister in this area. All patients are seen immediately and triaged even if the file is not yet ready.

The majority of patients were triaged yellow. Only 5 category red patients were seen. These patients were all brought to the unit with private transport by friends or family. The emergency services do not bring priority 1 or red patients to this private ED unless on strict request from the family or patient or if it is the closest hospital in an emergency. The public academic hospital in the area facilitates these patients and the emergency services will by default take these patients to the public ED. The private ED will treat all patients regardless of insurance status. The category yellow and green patients account for 85% of the uninsured patients seen in the private ED. Many of these non-urgent

cases cause a lot of traffic in the ED and could be managed at a general practitioner or clinic level. The relative cost of care would also be less at this level. The results of the study support with the findings of Rauf and co-workers who state that urgent cases are quickly assessed and managed in a government facility. The problem arises with the non-urgent cases who often have to wait very long to be seen on busy units and then filter over to private facilities. The majority of uninsured patients in the study were non-urgent.[25]

The difference between the median (121 minutes) and mean (139 minutes) times in the unit can be explained by the large group of green and yellow triage patients seen (85%). These patients generally have shorter stays in the ED.

Fifty three of the uninsured patients seen in the unit over the three month period were transferred to a government facility for admission. Of these 53, 20 were delayed in their transfer to the government facility. There was one patient delayed due to the government emergency service system having a backlog of awaiting transfers between facilities. The patient had a large neck abscess requiring surgical management in theatre in a government hospital. The patient was in the ED for 231 minutes.

Two patients requiring admission requested a quotation for admission at the private hospital. The quotations were obtained but the patients and their families could not afford to pay the large deposit required up front. They were then subsequently

transferred to a government facility. The administration process and calculation of quotes takes up a lot of time creating a frustrating situation for the physician. One of the patients had hepatitis with severe liver dysfunction and was in the ED for 255 minutes. The second patient had a closed distal radius fracture requiring surgery and was in the ED for 190 minutes. This scenario, from personal work experience is a common occurrence with many additional frustrations for a physician in a busy ED unit.

Seventeen patients were delayed due to insufficient bed availability in a specific department at a government facility. There were several referral hospitals contacted when the main referral hospital could not assist. The process of transfer is time consuming as the physician has to make the calls, working through the government facility switchboard. There are often no beds available at that specific time and the physician is then requested to phone the government hospital back at a certain time.

The most life-threatening diagnosis identified among those uninsured patients with a delay in transfer to a government facility was a patient with a ST segment elevation myocardial infarction. The patient received emergency care in the unit including thrombolytic therapy. The patient was in the unit for 423 minutes due to full occupation of high-care beds at government referral area facilities. The superintendent at the main government referral hospital was contacted and a bed was created for the patient. The patient was monitored continuously in the units' resuscitation area by a trauma sister as

in an intensive care setting. The resources and staff required to manage these patients put strain on an already busy ED.

The other urgent case identified was a patient with an upper gastrointestinal bleed. The patient received emergency care in the ED including emergency blood transfusion and was in the unit for 289 minutes. The delay was due to a shortage of surgical high care beds in the government sector.

The longest delay in transfer identified was a patient with a gallstones and small bowel ileus. The patient was in the ED for 715 minutes due to a shortage of general surgical ward beds at a government facility. The article by Bateman noted that a top South African hospital co-ordinator stated that it took her an average of 7-9 hours to transfer a stabilised patient from her private hospital to any state one.[11] The mean time an uninsured patient in the study with a noted delay in transfer spent in the unit was 319.6 minute or 5 hours and 19.6 minutes. This time is shorter than the average transfer time mentioned in the article but still lengthy.

Chapter 6: Conclusion

The private ED in the study is a busy unit with high patient volumes. It has been observed that there is an increase in the number of uninsured patients attending private ED's. They attend the higher priced private ED instead of the available government facilities or general practitioners. The study looked at the patient profile of these patients over a 3-month period to assist the unit in managing these patients more efficiently, improve the current situation and decrease frustrations among staff. The number of uninsured patients attending the unit was lower than expected but the transfers to government facilities and the delays had an impact on the unit with personnel and bed occupancy, time to stabilize, manage and monitor these patients as well as the costs involved. The study provides basic figures which can assist the unit in improving the current situations.

6.1 Study Recommendations

- Arrangement with the private hospital for accommodation of patients who are not able to immediately pay the entire deposit required for admission to the private facility.
- Allowance for temporary admission to the private hospital even if the patients' condition is not critical and there are no beds in government. To have this patient admitted until a bed does become available in the public sector in an effort to take the load off the busy ED and its staff.

- Arrange standby nursing staff to come to the ED when there is an uninsured patient in the unit for a long period, to assist with monitoring and management, allowing the trauma nurse to carry on with his/her duties.
- Preparedness of resources and staff for increased uninsured patient numbers over the weekend.
- Education of the public on the services available at public medical facilities and address their concerns about attending these facilities.
- Improve communication between the management team of the private hospital and ED and the academic and district facilities in the area. It will be of great value if the challenges surrounding bed availability and transfer of patients are discussed and management plans implemented at a senior hospital management level.

The study provides insight into the patient profile and number of uninsured patients presenting to a private emergency department in South Africa over a 3-month period. This data can assist the emergency department in planning and managing these patients who often present a challenge to the physician.

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Appendices

Appendix 1: Human Research Ethics Committee Clearance Certificate

R14/49 Dr Nicole Fourie

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

CLEARANCE CERTIFICATE NO. M150951

NAME: (Principal Investigator)	Dr Nicole Fourie
DEPARTMENT:	Emergency Medicine Eugene Marais Hospital
PROJECT TITLE:	Patient Profile of Uninsured Patients at a Private Emergency Department
DATE CONSIDERED:	02/10/2015
DECISION:	Approved unconditionally
CONDITIONS:	Title Change (11/12/2015)
SUPERVISOR:	Dr Anita Groenewwald
APPROVED BY:	Professor P Cleaton-Jones, Chairperson, HREC (Medical)
DATE OF APPROVAL:	12/11/2015

This clearance certificate is valid for 5 years from date of approval. Extension may be applied for.

DECLARATION OF INVESTIGATORS

To be completed in duplicate and **ONE COPY** returned to the Secretary in Room 10004, 10th floor, Senate House, University.
I/we fully understand the conditions under which I am/we are authorized to carry out the above-mentioned research and I/we undertake to ensure compliance with these conditions. Should any departure be contemplated, from the research protocol as approved, I/we undertake to resubmit the application to the Committee. **I agree to submit a yearly progress report**.

Principal Investigator Signature Date

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix 2: Letter of permission for the study from the hospital manager

Life HEALTH CARE Eugene Marais Hospital

Life Eugene Marais Hospital
696 - 5th Avenue, Les Marais, Pretoria 0084
PO Box 30013, Wonderboom Poort, Pretoria 0033
Telephone: +27 12 334 2777
Telefax: +27 12 334 2508
www.eugenemaraishospital.co.za

5th August 2015

To Whom It May Concern

Re: Nicole Fourie research project

Nicole has informed me of her retrospective study she wants to undertake,in terms of the patient profile of uninsured patients presenting to a private emergency department.

I have agreed to her research project, although she will not refer to the institution where her study was undertaken.

Yours Sincerely

J Joubert
Hospital Manager

A subsidiary of Life Healthcare Group (Proprietary) Limited
Reg. no. 1973/013249/07 Registered address Oxford Manor, 21 Chaplin Road, Illovo 2196, Private Bag X13, Northlands 2116
Directors: Dr WJ Basson, CLW Bekker, AP Brown, Dr JJ du Plessis, Dr DJM Frantzen, E van Dyk, Dr CJ van Wijk
EMH Operating Co (Pty) Lts trading as Life Eugene Marais Hospital

Appendix 3: Letter of permission from the unit manager of the emergency department

DR Louise Engelbrecht & Genote Inc.

696 5th Avenue, Les Marais, 0084
emtrauma@cybersmart.co.za

PO BOX 24184
Gezina
0031

Tel: 012 335 7430
Faks: 012 335 3311
Prak Nr: 059 000 0187852.

2015/08/25

To whom it may concern

STUDY: **Patient profile under uninsured patients presenting to a private emergency department**

This is to declare that the above study will be carried out in our practice, at the Eugene Marais Trauma Unit, with my full consent.

Dr Louise Engelbrecht
Emergency physician
Manager: Dr Louise Engelbrecht en Genote.
Life Eugene Trauma Unit

Appendix 4: Data collection sheet

Confidential

Patient profile of uninsured patients at a private emergency department

Data Collection Sheet1

Record ID: _____

Date of Consultation: _____

Age: _____
(In years/months)

Gender:
[] male
[] female

Triage priority:
[] Green
[] Yellow
[] Orange
[] Red

Outcome of consultation:
[] Admitted in private hospital
[] Transferred to government facility for admission
[] Discharged
[] Refused hospital treatment

Provisional diagnosis: _____

Time in unit (from arrival in unit to leaving unit:) _____
(HH:MM)

Delay in transfer? (if transferred to governmentfacility):
Reason for delay in transfer:

_____

Appendix 5: Provisional diagnosis of uninsured patients in the private emergency department over the study period

Diagnosis (Number of patients)
Ear Nose and Throat (Total=25)
Nasal bone fracture (1)
Epistaxis (2)
Vertigo (1)
Foreign body right ear (1)
Sinusitis (1)
Tonsillitis (6)
Allergic rhinitis (1)
Facial pain (1)
Upper respiratory tract infection (11)
Ophthalmology (Total=2)
Conjunctivitis (2)
Dermatology (Total=1)
Atopic Eczema (1)
Cardiology (Total=13)
Chest pain/angina (1)
Chest pain (3)
Acute on chronic congestive cardiac failure (1)
Non ST segment elevation acute coronary syndrome (1)
Congestive cardiac failure (3)
Congestive cardiac failure/digoxin toxicity (1)
Hypokalaemia/intermittent atrial fibrillation (1)
Cardiac lesion/chest pain (1)
ST segment elevation myocardial infarction (1)
Medicine (Total=96)
Community acquired pneumonia/Chronic obstructive pulmonary disease (1)
Bronchitis/Chronic obstructive pulmonary disease (1)
Acute exacerbation chronic obstructive pulmonary disease (1)
Bronchitis (5)
Acute asthma (4)
Atypical pneumonia (1)
Community acquired pneumonia (5)
Pulmonary tuberculosis/chest pain (1)
Pulmonary embolism (1)
Uncontrolled hypertension (5)
Hypertensive emergency (2)
Hypertension/anxiety (1)
Chemical exposure with dog dip (1)
Acute gastroenteritis (21)
Enteritis (1)
Urinary tract infection (12)
Allergic reaction (9)
Syncope (3)
Hepatitis (2)
Hepatitis from drug abuse (1)
Influenza (1)
Viraemia (4)
Severe hyponatraemia (1)
Rhabdomyolysis and acute renal failure (1)
Hypoglycaemia (2)
Serotonin syndrome (1)
Septicaemia (1)
Parasuicide/paracetamol overdose (1)
Parasuicide/benzodiazepine overdose (1)
Botulism (1)
Malaria (1)
General examination (2)
Post exposure prophylaxis (1)
Psychiatry (Total=3)
Major depressive episode (1)

Post traumatic stress (2)
Maxillo-facial Surgery (Total=6)
Dental abscess right mandible (1)
Soft tissue injury orbits (1)
Facial cellulitis (1)
Facial soft tissue injury (2)
Furunculosis behind ear/facial cellulitis (1)
Neurology (Total=5)
Seizures (1)
Uncontrolled epilepsy (1)
Migraine (2)
Cerebrovascular accident (1)
Orthopaedics (Total=63)
Soft tissue injury pelvis (1)
Hip contusion (1)
Femur fracture (1)
Femur neck fracture (2)
Osteoarthritis knee (2)
Ruptured bakers cyst knee (1)
Haemarthrosis knee (1)
Tibial plateau fracture (1)
Patella dislocation (1)
Soft tissue injury knee (7)
Soft tissue injury ankle (8)
Distal fibula fracture (1)
Bimaleolar ankle fracture (2)
Lateral malleolus fracture (2)
Calcaneus fracture (1)
Foot metatarsal fracture (1)
Soft tissue injury foot (2)
Infected bite foot (1)
Toe nail injury (2)
Clavicle fracture (2)
Shoulder dislocation (2)
Humerus fracture (1)
Soft tissue injury elbow (2)
Finger cellulitis (2)
Distal radius fracture (2)
Open wound wrist with early infection (1)
Soft tissue injury arm (3)
Hand cellulitis (1)
Septic spider bite hand (1)
Soft tissue injury hand (1)
Finger pulp injury (1)
Soft tissue injury finger (1)
Open thumb fracture (1)
Deep laceration finger (1)
Acute gout (2)
Neurosurgery (Total=17)
Forehead laceration/concussion (2)
Mild Head injury (1)
Concussion (1)
Head injury/periorbital haemoatoma (1)
Base of skull fracture/cerebral oedema (1)
Head injury/multiple soft tissue injuries (1)
Lumbar spine disc lesion (1)
Soft tissue injury cervical spine/mild head injury (1)
Soft tissue injury back (2)
Back muscle spasm (1)
Degloving scalp wound (1)
Haemorrhagic cerebral contusion (1)
Cervical spine pressure on dural sac/degenerative (1)
Soft tissue injury cervical spine (1)
Soft tissue injury cervical spine/neck muscle spasm (1)
Cardiothoracic Surgery (Total=5)
Rib fractures/early pneumonia (1)
Soft tissue injury chest wall (2)
Costochondritis (2)
Obstetrics and Gynaecology (Total=15)
Genital prolapse in pregnancy (1)

Upper respiratory tract infection in pregnancy (2)
Normal examination in pregnancy (1)
Ovarian hyperstimulation syndrome (1)
Threatening miscarriage (6)
Ovarian cancer (1)
Ovarian cyst (2)
Normal vaginal delivery (1)
Paediatrics (Total=60)
Neonatal Jaundice/sepsis (1)
Multiple flea bites torso (1)
Tonsillitis/otitis media (1)
Tonsillitis (11)
Lower respiratory tract infection (8)
Bilateral otitis media (1)
Viraemia (3)
Staphylococcal rash (1)
Acute gastroenteritis (6)
Colic (2)
Upper respiratory tract infection (10)
Mumps (1)
Headache (1)
Swallowed foreign body (1)
Otitis media (4)
Chemosiseyes?allergy (1)
Newborn (1)
Fever/teething (1)
Gastritis (1)
Rheumatic fever (1)
Bowel obstruction (1)
Rhinitis (1)
Leg abscess (1)
Surgery (Total=72)
Second degree burns buttock (1)
Gunshot wound abdomen and knee (1)
Gunshot wound arm (1)
Abdominal pain/blunt trauma (1)
Acute abdomen (2)
Small bowel obstruction (1)
Abdominal pain/colitis? (1)
Abdominal pain (9)
Dysphagia (1)
Dyspepsia (1)
Hiatus hernia (1)
Gastric carcinoma (1)
Peptic ulcer disease (3)
Upper gastrointestinal bleed (1)
Perforated peptic ulcer (1)
Gastritis (15)
Appendicitis (1)
Cholecystitis/gallstones (2)
Abdominal pain/?colitis (1)
Lower gastrointestinal bleed (1)
Strangulated inguinal hernia (2)
Small bowel ileus (1)
Faecal loading (5)
Faecal impaction (1)
Perianal abscess (2)
Haemarrhoids (3)
Neck abscess (1)
Cervical lymphadenitis (1)
Axillary lipoma (1)
Cervical lymph node malignancy (1)
Cellulitis leg (3)
Post breast augmentation sepsis (1)
Post abdominal hernia repair sepsis (1)
Post appendicectomy wound infection (1)
Thigh abscess (2)
General Trauma (Total=43)
Dogbite leg (2)
Dogbite arm and abdomen (1)

Dogbite hand (2)
Dogbite face (1)
Dogbite arm (1)
Dogbite thumb (1)
Animal bite (Dassie) lower limbs (1)
Laceration hand (4)
Laceration occiput (3)
Laceration scalp (3)
Laceration eyebrow (3)
Laceration forehead (2)
Laceration face (3)
Laceration nasal (1)
Laceration forearm (1)
Laceration finger (4)
Laceration thumb (1)
Laceration foot (1)
Laceration foot sole (1)
Laceration leg (2)
Laceration toe (1)
Fish hook in finger (1)
Ear abrasion (1)
Foreign body foot (1)
Accidental gunshot wound hand (1)