RESEARCH THESIS

COMMON MEDICAL PROBLEMS IN LATE STAGE HIV/AIDS ADULT PATIENTS IN RURAL MPUMALANGA AND THE RESOURCES USED FOR THEIR CARE

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DATE OF SUBMISSION 26th August 2002

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Declaration

I Margaret Gavin Hardman

hereby declare that this dissertation is being submitted to the University of Cape Town in partial fulfilment of the requirements for the degree of M.Phil in palliative Medicine. And that the work of this thesis is my own original work and that neither the whole work or any part of it is being submitted for another degree.

Signed Signed by candidate Tuesday, 26th August 2002

Abstract

Objective

The objective of this study is to identify the common medical problems seen in late stage HIV/AIDS patients in rural Mpumalanga. South Africa. and the resources used for their care.

Method

All HIV/AIDS patients classified as stage 3 or 4 disease. according to the WHO criteria and living in the northern Nzikazi area of Mpumalanga. who attended the ACTS community clinic or who received a home visit from a doctor or nurse from the clinic between 1st June and the 26th July 2002. were invited to take part in the study. All their medical problems reported or seen on their first visit during the study period. either at home or at the clinic. were recorded on a data-collecting sheet. This data was then tabulated and analysed. All medication issued at each visit was also recorded. tabulated. and analysed.

Results

The commonest medical problems were:

Pain 91% (Chest pain 53%) (Feet pain 40%) (Abdominal pain 26%)

Loss of weight 91%

Respiratory problems 76%

Lymphadenopathy 72%

Weakness 69%

Neurological problems 60% [Including peripheral neuropathy]

Gastro intestinal problems 54%

Dermatological problems 48%

Oral problems 47%

Genito-Urinary problems 41%

Fever 20%

Mood Disorders 13%

Medication used:

Patients who were issued analgesics:	88%
Patients who were issued antibiotics:	88%
Patients who were issued vitamins:	53%
Patients who were issued antifungals:	41%
Patients who were issued dermatological treatment:	27%
Patients who were issued antiemetics:	24%
The Patients who were on TB medication:	10%

Conclusion

Pain is a significant problem in late stage HIV/AIDS patients. It appears to have been unrecognised in Africa. TB is still a major cause of morbidity and mortality in our area, in spite of TB medication being freely available. Bacterial Pneumonia is common and can usually be recognised and treated in a primary care setting. Chronic Diarrhoea appears to be less of a problem where there is good sanitation and a clean water supply. Candidiasis is a common problem, and if not treated effectively affects the nutritional state of the patient. STIs are common, and there is a high incidence of cancer of the cervix.

The common medical problems of late stage HIV/AIDS patients which have been identified, could be managed at a Primary Health Care level, provided that the doctors and nurses working at that level are trained in HIV/AIDS management, and also in palliative care, and that the essential drugs are available. Community volunteers are able to provide basic nursing care, and manage minor medical problems if they are adequately trained and supported by professional medical staff.

Acknowledgements

I would like to acknowledge the assistance given by the following people.

To my supervisor, Dr Beth Harley. Her constructive criticism was always useful and practical.

To my colleagues, Dr Barry Spies and Professional nurses, Ruth Axton, Michele Cochlan, and Marita Nel, who assisted me in collecting the data on the medical problems. They always assessed the patients in a professional and caring manner.

To my husband Harry, who assisted me with the data analyses and the lay out of the results, for editing this thesis several times and for infinite patience with my many changes.

To all our staff at the ACTS clinic and to the Masoyi HBC volunteers who helped to interpret and explain the nature of the research questionnaire to the patients in their own language.

To GlaxoSmithKline and AIDS foundation that have been major funders in helping us to provide free palliative care to our hundreds of AIDS patients.

Chapter one - Introduction

1.1 Title

Common medical problems seen in late stage HIV. AIDS adult patients living in the northern Nzikazi area of rural Mpumalanga and the resources used for their care.

1.2 Introduction

Southern Africa remains the global centre of the HIV epidemic. It is estimated that around 4.7 million South Africans are currently HIV infected. with this number projected to increase to 6-7.5 million by 2010. Currently between 159000 and 163000 people are estimated to be living with AIDS with a five-fold increase in the next decade anticipated.[1] This is already evident in the medical wards of state hospitals where over 40% of all admissions are HIV related. death rates are increasing and formal and informal discharge policies for the terminally ill exist. Considerable stress will be added to health care services where demand for services will rapidly outstrip existing capacity.

Palliative care services remain underdeveloped in South Africa at both institutional levels such as hospitals and clinics. and community levels. I have a special interest in this study. as I am working in the rural Northern Nzikazi area of Kabokweni district in Mpumalanga in South Africa. The HIV/AIDS epidemic in this area is typical of many communities in South Africa. Of a total population of 250 000 people some 30 000. or 30% of sexually active adults. are HIV positive.[2] It is estimated that about 4000 people a year are dying of AIDS related causes. General poverty. limited quality of and accessibility to state run health care facilities leaves at least 3500 dying directly from AIDS in their own homes with limited or no provision of palliative care. I am seeing patients with late-stage HIV/AIDS on a daily basis.

In December 1997 I facilitated the formation of the Masoyi Home Based Care [HBC] project. This is a community-based organisation [CBO] where community volunteers go into the homes of terminally ill patients and provide them with basic nursing care. They also provide basic health information, counselling, and spiritual and social support. In May 2001 we opened a NGO Primary Health care clinic called Aids Care Training and support [ACTS] community clinic, from where a continuum of care for patients is provided by health professionals, including free home visits for bed bound HIV/AIDS, TB and cancer patients.

Many of the patients who attend the ACTS clinic have signs and symptoms of late stage HIV/ AIDS. Patients with signs and symptoms of late stage HIV/AIDS are also referred from the Masoyi Home Based Care community volunteers to Nurse practitioners from the ACTS clinic, who then go out and visit them in their homes. They conduct a full nursing assessment, and implement a care plan for the volunteers to follow. Depending on the needs of the patient, a doctor, nurse practitioner or volunteer does regular follow up visits. A list of the medical problems, items issued, and follow up date is entered into the computer at the ACTS clinic at the end of each day.

The volunteers have undergone training in basic nursing care including nutrition, oral rehydration, mouth care, pressure care, basic wound dressings, and how to follow a simple care plan. The Nurse Practitioners prescribe and issue medication and provide more specialised medical care and advice where needed. They also refer difficult to manage patients to a doctor with specialised palliative care training at the ACTS clinic, who will either see the patient in their home or in the clinic.

1.3 Understanding the community.

A large proportion of the population of Masoyi is rural and unemployed. Many younger people are forced to leave home for Gauteng to look for employment. The older generation and the children are left behind. When the younger people become ill or are no longer able to work, they return to their rural homes where elderly grandparents or their children care for them. Many of the men who are left behind have little with which to occupy themselves, resulting in boredom and frustration, which contributes to a high incidence of rape, child abuse, alcohol consumption, and STI and HIV infection.

67-72% of the employed have a monthly income of R500 or less.[42] Not many people own livestock. Land for cultivation is scarce, but under-utilised due to an unreliable water supply

The literacy rate is more than 70%, which is a good asset for the community. [42] There are 27 schools in the area, but only 4 secondary schools. The schools are overcrowded and under resourced. There is a high incidence of alcoholism and HIV infection among the teachers. [42]

There are four government clinics and one health centre in the area, as well as a private practitioner and the ACTS clinic.

The roads are very poor, and the terrain mountainous in part. Electricity has recently been installed on a pay as you go basis. Piped water is in the process of being installed, but many areas still have no piped water, and in the dry season water is brought to central points in tanks. Some people still collect water from the rivers.

The following points depict the health status and attitudes towards health and HIV/AIDS in particular:[43]

- Though ill many people prefer to stay at home, and not go for testing or treatment at a hospital or clinic, for fear of knowing their HIV status.
- If they decide to present themselves for treatment, they generally go in the late stages of their illness, after having attended traditional healers for many months.
- Many patients are co-infected with TB and HIV. It is more accepted to say that one has TB.
- Many people associate HIV/AIDS with witchcraft. In many cases where the husband has died of AIDS, the wife is blamed for the death.
- Teenagers become sexually active at an average age of 14. Both girls and boys go to the clinic for family planning. The girls prefer the pill or injection method to condoms, thus running the risk of contracting the HIV virus. Condoms are not used consistently by the boys.
- Most men are resistant to the idea of using condoms.
- Girls in particular like going out with older men. They are often offered material incentives, money or gifts. In some cases girls become sex workers, as they are seen to leave the community area to places like Nelspruit, Ngodwana, or areas around the mines or other industrial areas.[43]

1.4 Why this topic was chosen for Research

This topic was chosen for research in order to identify the common medical problems seen in late stage HIV/AIDS patients in rural South Africa, in order to assist medical personnel working in under resourced rural areas. It would also prioritise training needs for community home based care volunteers. It would identify the resources used for the management of patients with late stage HIV/AIDS that would help in

formulating simple cost-effective interventions in the homes. This would lead to the development of protocols, which could greatly improve the quality of life in these patients, and the protocols would provide guidelines for Home Based Care [HBC] in other areas of rural South Africa.

1.5 Overall Aim and objectives

1.5.1 Aim

To identify common medical problems seen in adult patients with late stage HIV/AIDS living in the rural Northern Nzikazi area of Mpumalanga and the resources used for their care.

1.5.2 Objectives

- To list the medical problems seen in late stage HIV/AIDS patients that attended the ACTS clinic or received a home visit from nurse practitioner from the ACTS clinic between the 1st June and the 26th July 2002.
- To correlate the most common problems
- To list the medication issued to the patients for each problem.
- To list the number of visits and the total time spent with the patient, by the nurse practitioners, community volunteers and doctors.

Chapter two - Literature Review

A Medline search looking for the common medical problems seen in late stage HIV/AIDS was conducted at the University of Pretoria Medical Library and the relevant original articles obtained from the journals. Contact was also made with relevant expert researchers in this field in South Africa by email and telephonically. A few significant studies conducted in Africa, and one in Europe, were selected. These were then grouped and summarised. Reference was made to research conducted on particular common medical problems seen in late stage HIV/AIDS.

2.1 AIDS - the Baragwanath experience[3]

This article records the clinical presentation of patients with HIV infection at Baragwanath Hospital, Soweto, South Africa seen during the early stage of the epidemic. All patients seen in the adult medical wards at the hospital from August 1987 to December 1990, as well as all adult patients referred to the HIV clinic from Nov 1989 to December 1990, were studied retrospectively. 181 HIV positive patients were seen. 92 of these patients were in the late stage of the disease. The most common presentations were: lymphadenopathy, tuberculosis [TB], acute pneumonia, herpes zoster, and Slim disease.

Major clinical presentations in HIV infected Adults.

Presentation	Number
Tuberculosis	45
Pulmonary tuberculosis	28
Pleural effusions	4
Lymphadenopathy	5
Miliary TB	3

Paraplegia [TB Spine]	2
Pericarditis	2
Dermatological	1
Other Respiratory disease	24
Acute pneumonia	21
Pulmonary infiltrate	2
PCP	1
Dermatological Diseases	25
Herpes Zoster	19
Skin sepsis	4
Seborrhoeic dermatitis	2
Gastro intestinal disease	13
Slim Disease	10
Hepatosplenomegaly	3
STD	13
Neurological Disease	12
Dementia	5
Paraplegia	3
Cerebellar disease	2
Cryptococcal meningitis	2
Other infections	8
Gram negative septicaemia	3
UTI	3
Salmonellosis	2

2.2 Natural history and clinical presentation of HIV-1 infection in Adults[4]

This was published in 1991 by R Colebunders and A Latif. and summarises earlier research done on clinical manifestations of AIDS in Africa. Studies were done mainly in Zaire. Uganda and Tanzania.

Clinical manifestations in patients with AIDS in Africa.(%)

	Zaire	Uganda	Tanzania
Weight Loss > 10% Body weight	99	82	91.5
Weakness Asthenia	91	N A	97.5
Fever [> 1 month]	54	79	79
Diarrhoea [> 1 month]	41	60	75
Cough	37	41	42.5
Pruritus	30	NA	NA
Dysphagia	35	NA	NA
Headache [> 1 month]	33	NA	NA
Dyspnoea	23	21	NA
Amenorrhoea	42	NA	77
Oral Thrush	47	36	56.5
Papular pruritic eruption	20	36	70.5
Generalised Lymphadenopathy	11	20	36.5
History of Shingles	9	10	6.5
Neurological abnormalities	20	NA	72
Focal neurological disorder	NA	NA	10.5

2.3 HIV-1 Disease progression and AIDS defining disorders in Rural Uganda[5]

This study was published in the Lancet in 1997. A study was done of 179 HIV infected people recruited from 15 villages in rural Uganda. Participants were seen between 1990 and 1995 at a study clinic every 3 months. Clinicians recorded details of the medical history and examination of each patient on detailed questionnaires. If they were too ill to attend, the clinician would visit them at home. Classification of the stages was based on clinical criteria [including a performance scale] according to the WHO staging system. The most common causes for entry into stage IV were: HIV wasting syndrome [46%], oesophageal candidiasis [33%], mucocutaneous herpes simplex infection for longer than 1 month [13%], and Kaposi's sarcoma [KS], [13%]. These findings contrasted with two studies of Africans who presented in London, where TB [20-27%], Pneumocystis Carinii Pneumonia [PCP], [19-21%], and oesophageal candidiasis [13-19%] were more common than mucocutaneous genital herpes, cerebral toxoplasmosis, cryptococcal meningitis, Kaposi's sarcoma and wasting.

2.4 The Mortality and Pathology of HIV infection in a West African City[6]

Consecutive adult medical admissions to a large city hospital in Côte d'Ivoire were studied in 1991, and 294 of HIV positive deaths autopsied Autopsies showed that three infections, TB, bacteraemia, and cerebral toxoplasmosis, accounted for more than 50% of the deaths. The conditions that dominate the management of AIDS in industrialised countries, PCP, Cytomegalovirus [CMV], lymphoma, and atypical Mycobacteriosis, were all uncommon.

2.5 HIV- associated adult mortality in a rural Tanzanian population[7]

Information on the symptoms noticed by the person attending at the time of death of 64 HIV positive patients was obtained by interviewing the household member who had cared for the deceased during the final illness. This member was questioned about the signs and symptoms preceding death, using a verbal autopsy questionnaire developed to investigate adult deaths in rural areas. The study showed that HIV positive deaths were significantly associated with fever, rash, weight loss, anaemia, cough, chest pain, abdominal pain, and headache.

2.6 The evolving HIV epidemic in a rural hospital in Zululand from 1989-1993[8]

The study was done in a rural hospital in northern Zululand. Of the 424 HIV positive adults that were studied, 38% presented with AIDS. 27% of these patients presented with loss of more than 10% of body weight or cachexia, as well as diarrhoea or fever, either intermittent or constant, for at least one month; 45% with TB; 1% with Kaposi's sarcoma; 3% with neurological impairment; 1% with oesophageal candidiasis.

2.7 HIV Related Mortality in South African Adult patients[9]

This retrospective study analysed the causes of death in 96 HIV positive patients who attended the HIV clinic of the Johannesburg Hospital between July 1991 and June 1995. The study population was predominately urbanised. 52% were white and 40% were black patients. The mean age of death was 34 years. Although AIDS Dementia Complex [ADC] was the most frequent condition present at death. [15.7%] TB, PCP, bacterial infections, cryptococcal meningitis, MAC, and CMV were responsible for 56% of deaths. Significant differences in the causes of death were found between

black and white patients. 63.4% of immediate causes of deaths in blacks were of an infectious cause. TB was the major cause of death, followed by bacterial infections, cryptococcal meningitis and PCP. The latter infections in white patients made up only 28.7% of all causes of death. Aids Dementia Complex [ADC], PCP, disseminated Mycobacterium Avium Complex and Cytomegalovirus [CMV] were the most common causes of death in white patients.

2.8 The changing pattern of transmission and clinical presentation of HIV infection in the Western Cape region of South Africa[10]

This study, at a major HIV referral clinic in Cape Town, describes the changes in clinical presentation of a large adult HIV population (n=1288] over an eleven-year period. From 1984 -1991 data were obtained by retrospective chart review and from 1992-1995 were collected prospectively. The attendance of large numbers of patients from each of the three main population groups (so-called "white", "coloured" and "black") allowed a unique opportunity to compare disease frequency in these groups. During the study period, the change in predominant HIV transmission pattern from homosexual to heterosexual resulted in significant changes in patient demography and HIV presentation. The relative incidence of PCP declined, while pulmonary and extra pulmonary TB increased. Wasting syndrome and HIV encephalopathy were noted to occur less frequently in black patients. The presentation of AIDS in Cape Town differed significantly in each of the population groups and from both Western and African reported series. Kaposi's sarcoma, PCP, oesophageal candidiasis, and herpes simplex infections were diagnosed more frequently than previously described in South African reports.

2.9 Morbidity and Mortality in South African Gold Miners Impact of untreated disease due to immune deficiency virus[11]

A cohort of 1792 HIV positive SA miners was observed for 12 months from February 1998 to February 1999. TB, bacterial pneumonia, cryptococcus and trauma, were the major causes of admission to hospital for the HIV positive patients, whereas PCP was an uncommon cause. Enteritis, bronchitis, urinary tract infections, and soft tissue infections were also significantly associated with HIV infection. Cryptococcus caused 44% of the deaths among HIV positive patients.

2.10 A multi-centre French National study[12]

This study conducted in 1994 showed that the prevalence of symptoms during HIV disease was as follows:

Pain	52%	Fever	27%
Tiredness	50%	Cough	27%
Anxiety	40%	Depression	24%
Sleep disturbances	37%	Diarrhoea	24%
Sore mouth	33%	Dermatological problems	24%
Sadness	32%	Pruritus	23%
Weight loss	31%	Respiratory problems	22%
Nausea	28%	Vomiting	20%

2.11 Gastro intestinal problems

2.11.1Chronic Diarrhoea

Diarrhoea is a significant problem in 50-90% of HIV patients.[13] Persistent diarrhoea is common in AIDS. Studies from Zaire, the Central African Republic, Uganda and Tanzania suggest that 40-80% of people with AIDS will suffer from persistent

diarrhoea at some stage.[14] The commonest causes in late stage HIV/AIDS are protozoa infections. The commonest being Cryptosporidium. Isospora belli. Microsporidium. Giardia. Entamoeba histolytica. Bacterial infections include Salmonella. Shigella. Mycobacterium Avium. Mycobacterium Tuberculosis. There are also viral. fungal and neoplastic causes.[15] Diarrhoea may be a side effect of medication. or herbal remedies. Secondary lactose intolerance may also develop. In up to 50% of cases no cause can be found.[16] Simple microscopy of the stools is valuable. Cysts and parasites can be identified and appropriate treatment given. In Africa chronic diarrhoea has often been linked with Slim disease. In a study in Uganda the most common cause of entry into stage IV was HIV wasting syndrome.[5] Chronic Diarrhoea. wasting syndrome. and enteric fever like illnesses due to non typhoid salmonella species are amongst the most common serious illnesses noted in studies of HIV infection from other parts of Africa.[4] However in a recent study in South Africa on HIV positive gold miners this was not the case.[11] The relative scarcity of gastro intestinal symptoms may reflect the regional differences or it may indicate that sanitation and water supplies in gold mines are unusually good for Africa.

2.11.2 Nausea, Vomiting, Anorexia

Drug therapy. central nervous system infections or space occupying lesions. metabolic disorders. gastro-intestinal infections. or intestinal obstruction by intra abdominal tumours [most commonly a lymphoma or Kaposi's sarcoma] can cause nausea and vomiting [12]

2.11.3 Dysphagia

One of the common digestive symptoms is dysphagia or odynophagia. and if left untreated may severely compromise the nutritional status of the patient. In a

prospective study in Milan, Italy, on 154 HIV positive patients, pain on swallowing was reported in 31% and 21% had associated dysphagia. These patients underwent oesophagoscopy. There was a clear preponderance of candidiasis over other forms of infection.[17] A short course of systemic antifungals was advocated.

2.12 Dermatological Problems

Skin problems are frequent in people with HIV. In Lusaka, Zambia, one or more skin lesions occurred in 98% of AIDS patients.[4] Dermatological manifestations observed in individuals with HIV infection in Africa are quite different from those observed in Europe or the United States. The common skin conditions include: [18]

Papular pruritic eruption. This was seen in 20% of patients in a Zambian Study.

Seborrhoeic dermatitis, fungal skin conditions, hypersensitivity reactions, bacterial conditions or abscesses, molluscum contagiosum, scabies, eosinophilic folliculitis and dry pruritic skin are all common. A history of herpes zoster is reported in 10%-15% of patients in Africa. 25% is recurrent. [4]

2.13 Genital Sores, Ulcers and discharges

In a recent study done in Kwazulu,[19] the association between the causative agents of vaginal discharge and pelvic inflammatory disease [PID] among women attending a rural sexually transmitted disease clinic in South Africa was assessed, and the role played by coinfection with HIV-1 virus was studied. A total of 696 women with vaginal discharge were recruited, 119 of who had clinical PID. Patients with trichomoniasis had a significantly higher risk of PID than did women without trichomoniasis. When patients were stratified according to HIV status, the risk PID in HIV positive patients increased significantly.

Percentage of HIV – patients			
Infectious agent or condition	All (N=388)	Had discharge only	Had discharge with PID
Bacterial vaginosis	78	79	78
Trichomonas vaginalis	32	29	47
Neisseria gonorrhoea	16	14	21
Chlamydia trachomatis	15	14	17

Many studies have been done on the association between STI's. and the spread of HIV. especially genital ulcer disease.

Low CD4 counts can be associated with persistent AIDS defining herpes simplex lesions. which present as painful genital or perianal ulceration.[3] These can be quite extensive. Management includes antivirals until the lesions have cleared.

2.14 Oral Conditions

2.14.1 Oral candidiasis

More than 90% of HIV positive people will have oral candidiasis. most commonly at low CD4 counts.[18&21] In Kigali Rwanda. a study of 259 patients with HIV infection found that the most frequently reported oral lesion was oral candidiasis. [21%][20] Other conditions include periodontal disease. apthous ulcers and herpes simplex ulcers.

2.15 Respiratory Problems

60% of AIDS patients have a respiratory problem as the cause of their disease. Predictably the main symptoms are cough and breathlessness.[24] However wheeze. chest pain. haemoptysis. fever and general malaise may accompany any pathology.

2.15.1 Tuberculosis

Tuberculosis is the most common. serious and life threatening opportunistic infection in people in Africa. Approximately 50-60% of people with HIV infection will develop active TB disease at some stage of their disease. This means that there is a ten fold increased risk of developing TB in a patient who is HIV positive.[25&26] In a recent study of HIV positive gold miners in SA TB was the most common cause for admission to hospital.[11]

2.15.2 Bacterial Pneumonia

In the Baragwanath study acute bacterial pneumonia was a major clinical presentation in HIV positive adults admitted to hospital second only to tuberculosis.[3] Acute pneumonia was the second commonest cause of hospitalisation of HIV infected patients in the gold miner's study.[11] The commonest organism was the pneumococcus.[11]

2.15.3 Pneumocystis jiroveci

Pneumocystis jiroveci was one of the major causes of hospitalisation of HIV positive patients in the developed countries before the introduction of chemoprophylaxis.[9] Pneumocystis jiroveci was considered rare in Africa. This could be due to technical difficulties in diagnosing Pneumocystis jiroveci. and also due to the fact that patients in Africa often die of TB or Pneumonia while their CD4 count is still relatively high.[3] Studies in Africa have reported wide variation in the incidence of Pneumocystis jiroveci. A study done in Cape Town showed that Pneumocystis jiroveci is commoner in developing countries than was originally thought. and can be a terminal event.[27]

2.15.4 Kaposi's Sarcoma & Non Hodgkin's Lymphoma

Kaposi's sarcoma or non Hodgkin's lymphoma can also infiltrate the lungs and cause respiratory symptoms In the research conducted in the HIV clinic of the Johannesburg Hospital the incidence of Kaposi's sarcoma. and non Hodgkin's lymphoma were found to be significantly higher in White South Africans than Black South Africans.[9]

2.16 Neurological Problems

Up to 2/3rds of patients with HIV infection will experience neurological problems. which can occur during the acute seroconversion illness. during the period of immune dysregulation before immunosuppression develops. or as a consequence of late stage primary HIV infection. opportunistic infection and malignancy. [28]

Disease can develop at any level of the nervous system. involving cortex. cord peripheral nerve and muscle

2.16.1 Aids Dementia Complex

Neurological manifestations found to be associated with HIV positive hospitalised patients in Kinshasa were: personality changes. social withdrawal. difficulty in concentrating. mental slowing. insomnia. difficulty in walking. tremor of the hands and hyperreflexia. 23% of the HIV positive patient presented with at least five of these symptoms.[4] In a study performed among 200 AIDS patients in Tanzania. AIDS dementia complex was noted in 54%. hyperreflexia in 21%. tremor in 19%. lack of co-ordination in 19%. and an obvious neurological disorder including cranial nerve palsies. hemiparesis. and paraparesis in 10% of patients.[7]

2.16.2 Cryptococcal Meningitis

This Aids defining disease is very common in sub-Saharan Africa. It may present atypically. Patients usually present with varying combinations of fever. headache.

nausea, vomiting, cognitive dysfunction, such as irritability, behavioural changes, somnolence, and even psychosis.[29&30] Cryptococcal disease was the most common cause of death in the Gold Miners study.[11]

2.16.3 Spinal Cord Involvement

The spinal cord is often involved in HIV infection. In developed countries vacuolar myelopathy [VM] is common. VM typically presents late in the course of HIV infection, with slowly progressive weakness over months. There is often associated urinary frequency or urgency and gait abnormality. Spasticity is not usually marked. In South Africa the spectrum of myelopathies in HIV infected patients is different. A recent study from Kwazulu found the major causes to be HTLV1, TB, herpes zoster, syphilis and bilharzia VM were rare. HTLV1 presents with slowly progressive paraparesis with marked spasticity and mild sensory symptoms.[29]

2.16.4 HIV related neuropathy

HIV related neuropathy occurs in a third of patients with CD4 counts below 200, and presents with pain and/or numbness in a glove and stocking distribution. In a study done in a pain management centre in Boston in 2000, it was reported that neuropathic pain is highly prevalent in patients with cancer and with patients with AIDS.[31]

2.17 Pain in late stage HIV/Aids

Research conducted in Los Angeles in 2000 on 151 adults with a diagnosis of advanced HIV or AIDS, found that 83% of the participants reported AIDS related pain in the last three months.[32]

In a study conducted in Chicago in 1999, pain was found to be the commonest reason for hospitalisation for patients with HIV/AIDS.[33]

A growing body of literature has demonstrated the widespread under-treatment of pain in AIDS.[34] Unlike Cancer, pain for AIDS patients is often not permanent, but temporary, and associated with infections. If the infections are treated energetically, the pain reduces and less pain control is needed.[35]

In a study designed by Laschinger, to elicit the experience of pain in persons with HIV/AIDS, the four themes that emerged from the data were physical pain, painful losses, and the pain of not knowing and social pain.[36]

2.18 Malignant Disease

Over 40% of all patients with HIV infection will develop malignant disease at some time during the course of their illness.[37] AIDS and malignancy together constitute a deadly combination. The commonest HIV related malignancies that are seen in Africa and developing countries are Kaposi`s sarcoma, non Hodgkin's lymphoma and cancer of the cervix. Kaposi's sarcoma is 86 times more common in HIV positive males, than negative males and 260 times more common in HIV positive females than in negative females. Cancer of the cervix is 9 times more common in HIV positive women than negative women.[38]

2.19 Weakness and loss of weight

People with advanced AIDS often have profound weight loss, with loss of muscle bulk, the so-called wasting syndrome, or Slim disease as it is known in Africa. This is often due to undiagnosed opportunistic infections combined with chronic diarrhoea and poor nutrition. This usually has a poor prognosis. Weakness and loss of weight were the commonest symptoms reported in many African studies. [4&5]

2.20 Lymphadenopathy

Symmetrical generalised lymphadenopathy [particularly involving the cervical, epitrochlear, and axillary nodes] 2 cm or less is characteristic of HIV infection. Lymphadenopathy tends to regress with advancing immunosuppression and recurrence is a strong pointer towards disseminated tuberculosis, Kaposi's sarcoma or lymphoma, especially if unilateral. [28]

2.21 Fever and night sweats

Fever is often the sign of secondary infections, and every effort should be made to find out the underlying cause. Fever in African studies is commonly reported especially in the terminal illness.[7]

Conclusion

The literature shows a that the common medical problems caused by HIV/AIDS have been studied using many different approaches - autopsy results, diagnoses at presentation at various facilities, or symptoms experienced by patients. The results show that there is a great variation in opportunistic infections between communities in different geographical areas, especially between industrialised and developing countries, and between different racial groups in the same area. There is more emphasis on the symptoms experienced by the patients, especially pain, in studies conducted in Europe and America, than those conducted in Africa, where the emphasis has generally been on opportunistic infections.

I have not included "the Resources used to care for late stage HIV/AIDS patients", in this literature review as this is an extra field of research.

Chapter Three Methods.

3.1 Study Design

A cross-sectional descriptive study

3.2 Study population.

All late stage HIV/AIDS adult patients living in the Northern Nzikazi area of Mpumalanga

3.2.1 Study Sample

The study sample consisted of all late stage HIV AIDS adult patients that attended the ACTS community clinic or received a home visit from a health professional from the clinic between 1st June 2002 and 26th July 2002. Data was collected from 100 patients who were willing to participate in the study. The original study was going to take place from 1st of June to 31st of July but a cut off point at the 26th of July was made when a hundred patients were seen.

3.2.2 Exclusions

A number of patients were unwilling to participate and were not willing to sign the consent form due to the stigma attached to being labeled as HIV/AIDS. Others were in denial that they were HIV positive. If they were unwilling to participate in the study they were excluded. The number of patients not willing to participate in the study was not recorded.

3.3 Variables

3.3.1 Definitions

3.3.1.1 Late stage HIV/AIDS

An adult is considered to be late stage HIV/AIDS if they have the clinical signs of the WHO stage three or four staging criteria, and are bed bound for more than 50% of the day.

3.3.1.2 Medical problems

In rural areas there are limited resources, and x-ray and laboratory facilities are not always available. Comprehensive tests are often impossible to carry out to confirm the clinical diagnosis. Thus the term medical problem has been used to describe clinical symptoms and or signs.

3.4 Data Collection

A doctor or a professional nurse filled out a data collecting sheet for the first visit [during the study period] of every late stage adult HIV/AIDS patients attending the ACTS community clinic between the 1st June and the 26th July 2002. The same was done for every late stage HIV/AIDS patient that received a home visit from a professional nurse or a doctor from the clinic during this same period. For many of these patients, this was not their first visit to the clinic, or their first home visit. The doctor or nurse practitioner listed all the medical problems that they reported on that day, as well as what was found on clinical examination, and the medications that they were issued on that day. This document is included as Appendix 1. Details of the time spent with the patient, whether the consultation was conducted by a doctor or a nurse

practitioner, and if a community volunteer was already caring for the patient were also recorded.

3.5 Analysis

Data collected from these records was entered into a computer database using custom-designed Microsoft access entry forms and the reports generated into suitable graphs. Each medical problem was plotted to show the relative incidence of this particular problem. Each medication issued was also plotted to show what the most commonly prescribed medications were.

3.6 Ethical considerations

Consultations by doctors and professional nurses are part of the normal routine of the ACTS clinic. Visits by community volunteers, nurses, and doctors are part of the normal routine of the HBC program. Record keeping is also done routinely.
Stage III and IV HIV/AIDS patients who volunteered to be part of the research were given information concerning the research, and signed a consent form. All records were treated as strictly confidential by the team.

3.7 Implementation

3.7.1 Timetable

Data was collected from 1st June 2002 to 26th July 2002

Data was continuously entered into the computer and analyzed by the investigator in August 2002.

The write up of the findings was completed by August 2002

3.7.2 Costs

The costs of this research were covered by the costs of the routine home visits budgeted for the project. Estimated costs:

Transport	R1000	R10 per visit
Stationary	R800	
Photo Copies	R300	R3 per record

Chapter 4

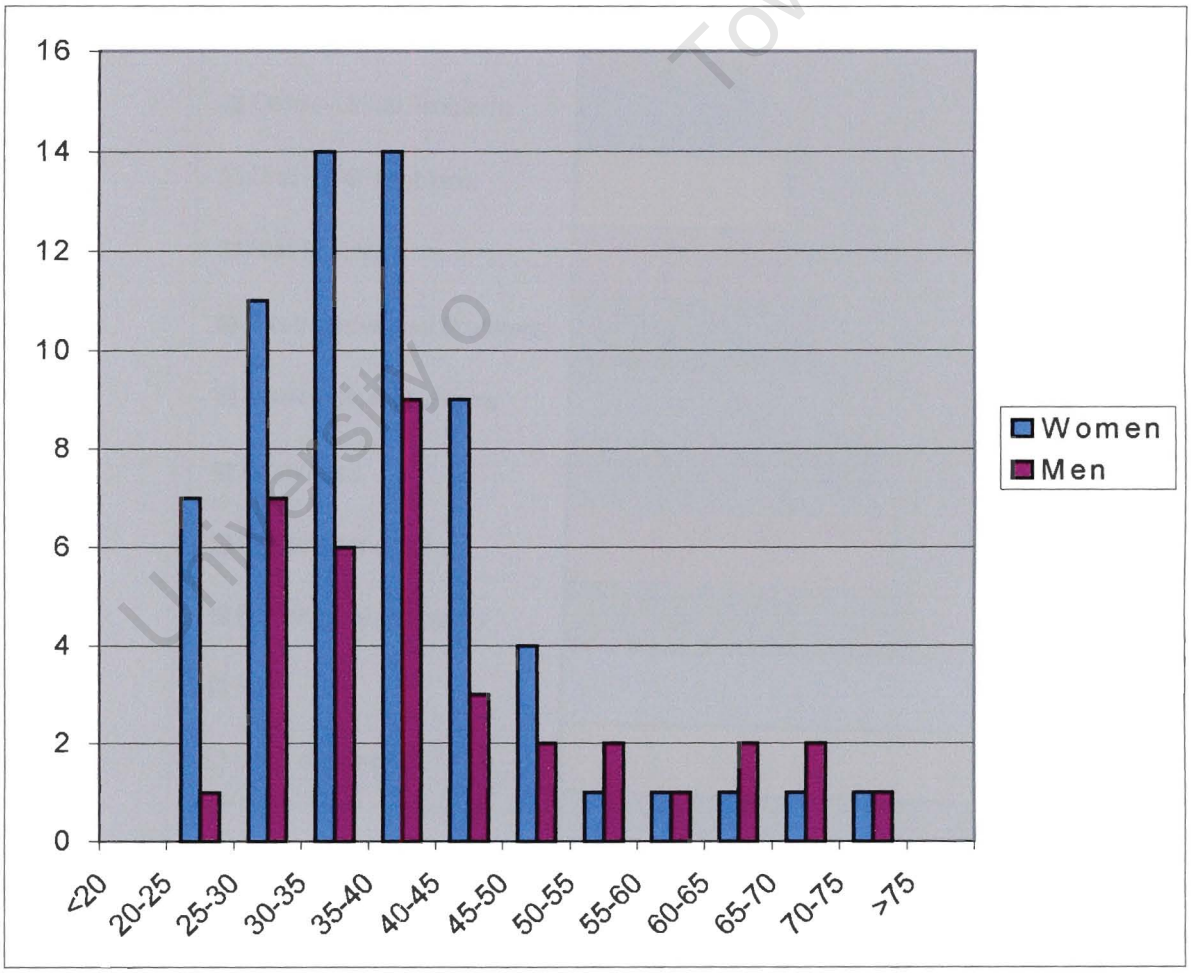
Results Tables and Graphs

Table 1 Patient Sample details

Number of Patients	100
Tested HIV +ve	75
Not Tested	25
Average Age	39
Number seen by Doctor	61
Number seen by Nurse	39
Average Number of visits prior to research	3
Max number of visits prior to research	16
Min Number of visits prior to research	0
Number of Male Patients	36
Number of Female Patients	64
Number of patients who died during study	15
Number of patients staged as RVD III	18
Number of patients staged as RVD IV	82
Number of patients seen at the clinic	63
Number of patients seen at home	37
Average time spent with patient at home	30
Average time spent with patient at clinic	33
Minimum time spent with patient at home	20
Minimum time spent with patient at clinic	20
Maximum time spent with patient at home	60
Maximum time spent with patient at clinic	60
Patients seen by Doctor at Home	3
Patients seen by Doctor at Clinic	58
Patients seen by Nurse at Home	34
Patients seen by Nurse at Clinic	5
Number of patients within 12 km	93
Number of patients within 20 km	7

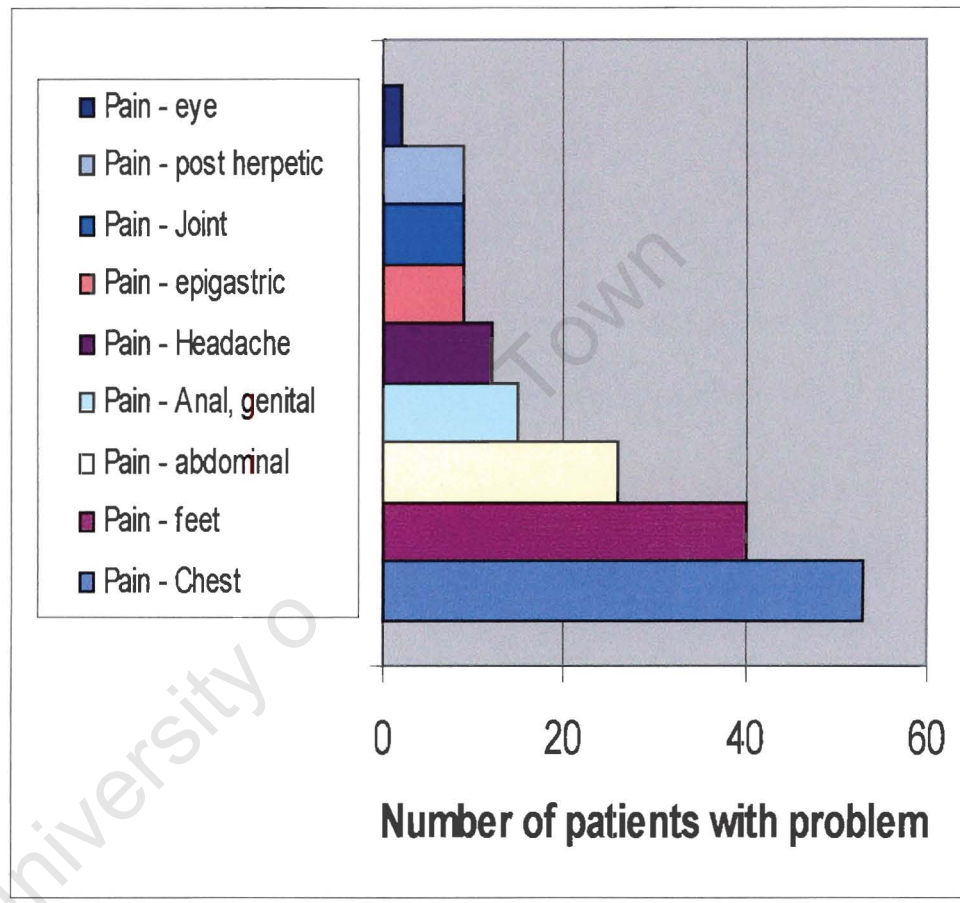
Graph 1 Patient Age Distribution

Ages	Women	Men
<20	0	0
20-25	7	1
25-30	11	7
30-35	14	6
35-40	14	9
40-45	9	3
45-50	4	2
50-55	1	2
55-60	1	1
60-65	1	2
65-70	1	2
70-75	1	1
>75	0	0



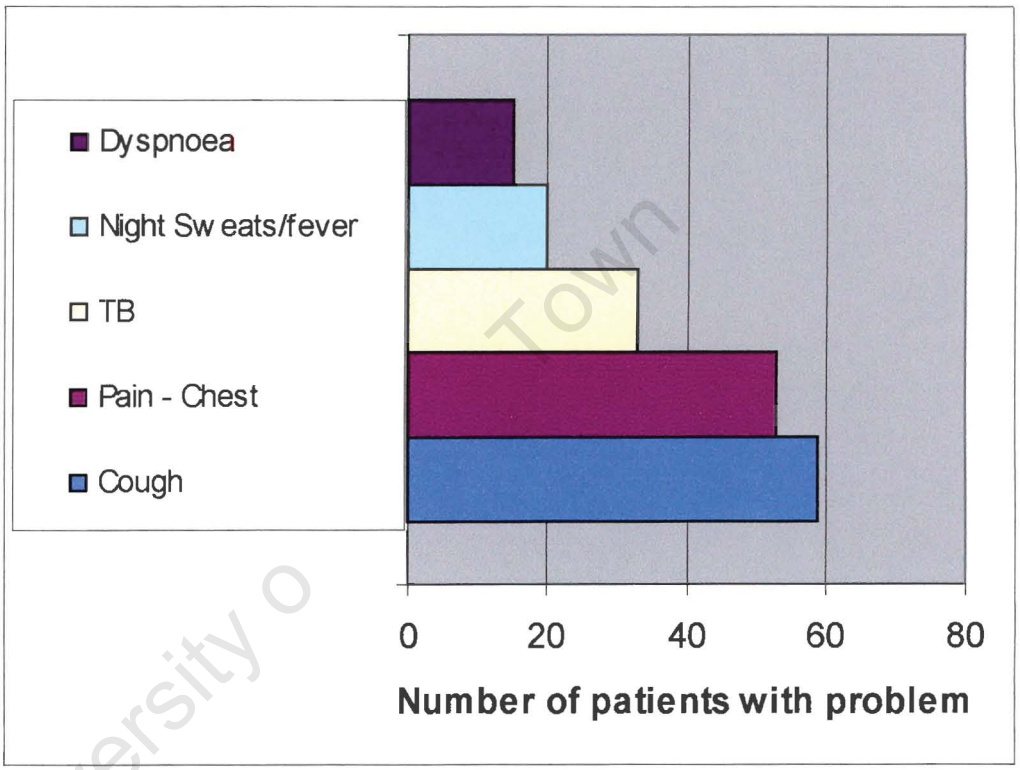
Graph 3 Pain

Pain - Chest	53
Pain - feet	40
Pain - abdominal	26
Pain - Anal, genital	15
Pain - Headache	12
Pain - epigastric	9
Pain - Joint	9
Pain - post herpetic	9
Pain - eye	2



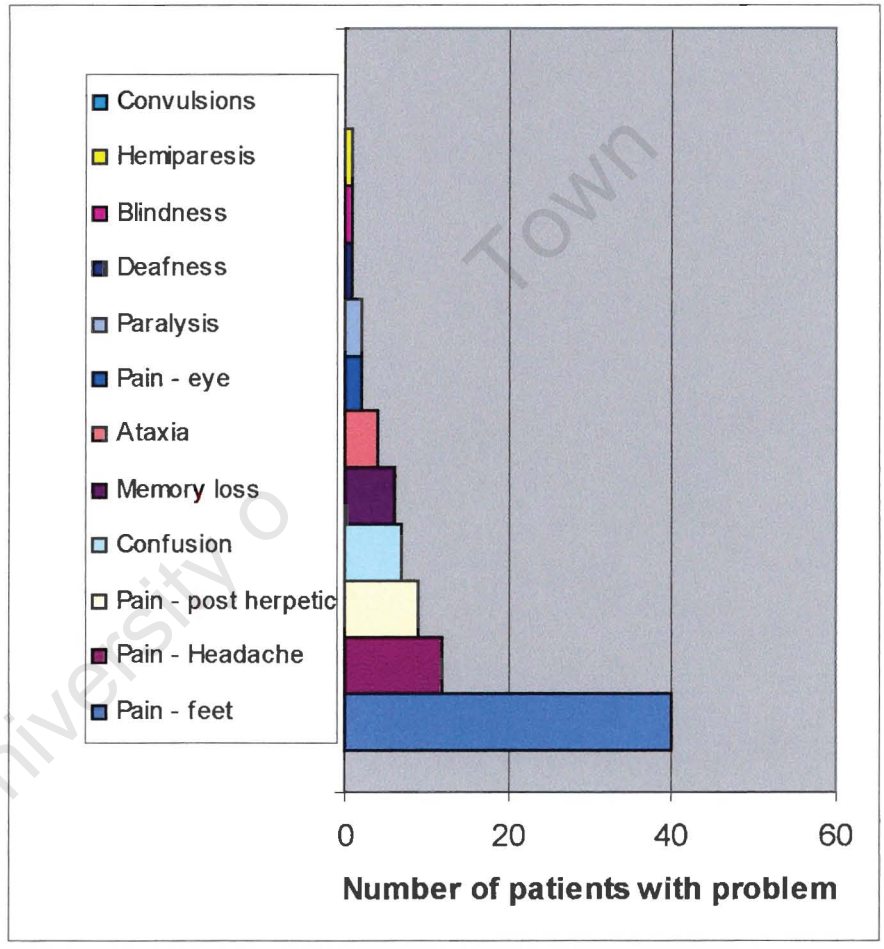
Graph 4 Respiratory Problems

Cough	59
Pain - Chest	53
TB	33
Night Sweats/fever	20
Dyspnoea	15
Cough	59
Pain - Chest	53
TB	33
Night Sweats/fever	20
Dyspnoea	15



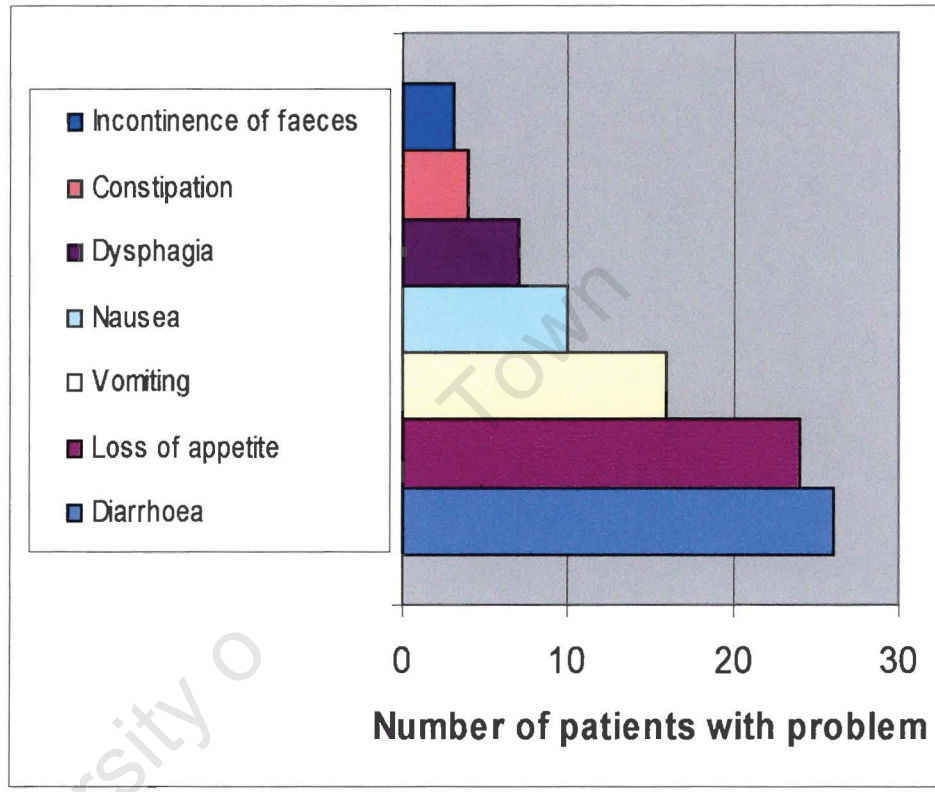
Graph 5 Neurological Problems

Pain - feet	40
Pain - Headache	12
Pain - post herpetic	9
Confusion	7
Memory loss	6
Ataxia	4
Pain - eye	2
Paralysis	2
Deafness	1
Blindness	1
Hemiparesis	1
Convulsions	



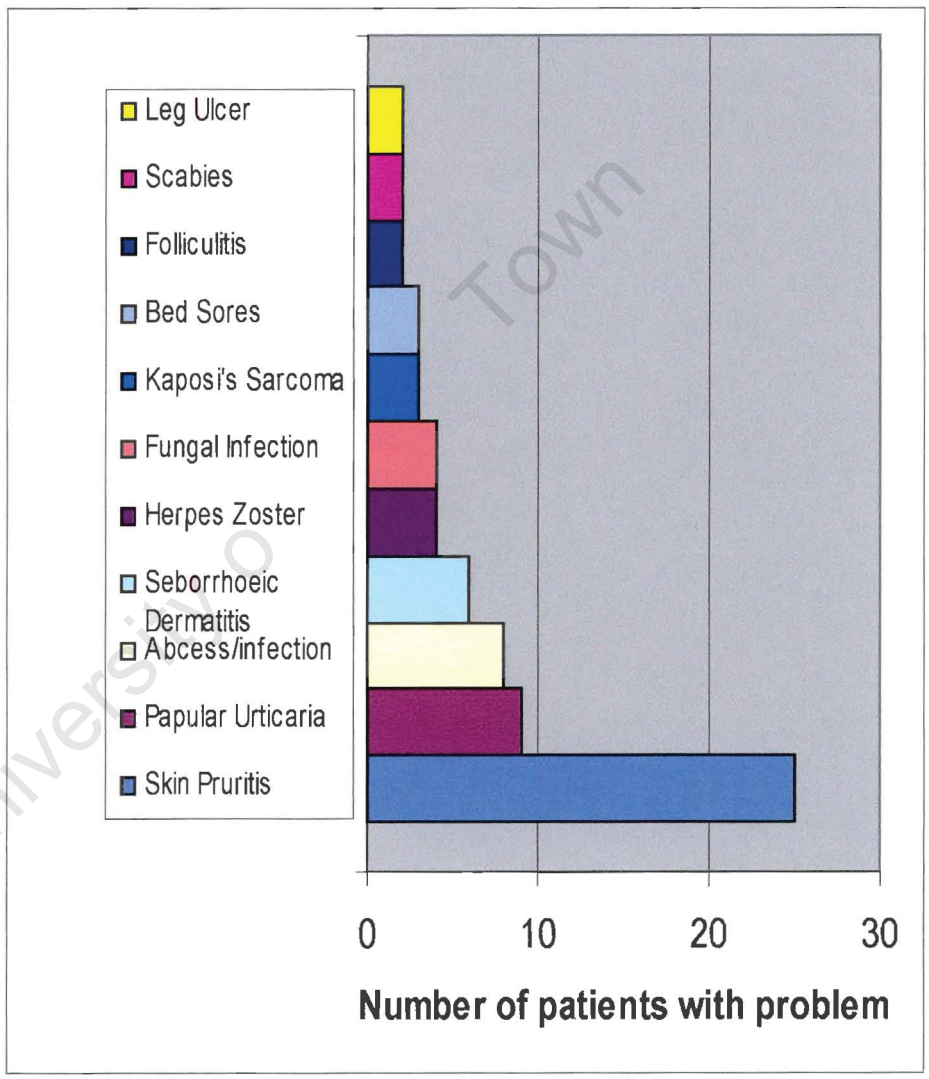
Graph 6 Gastro Intestinal Problems

Diarrhoea	26
Loss of appetite	24
Vomiting	16
Nausea	10
Dysphagia	7
Constipation	4
Incontinence of faeces	3



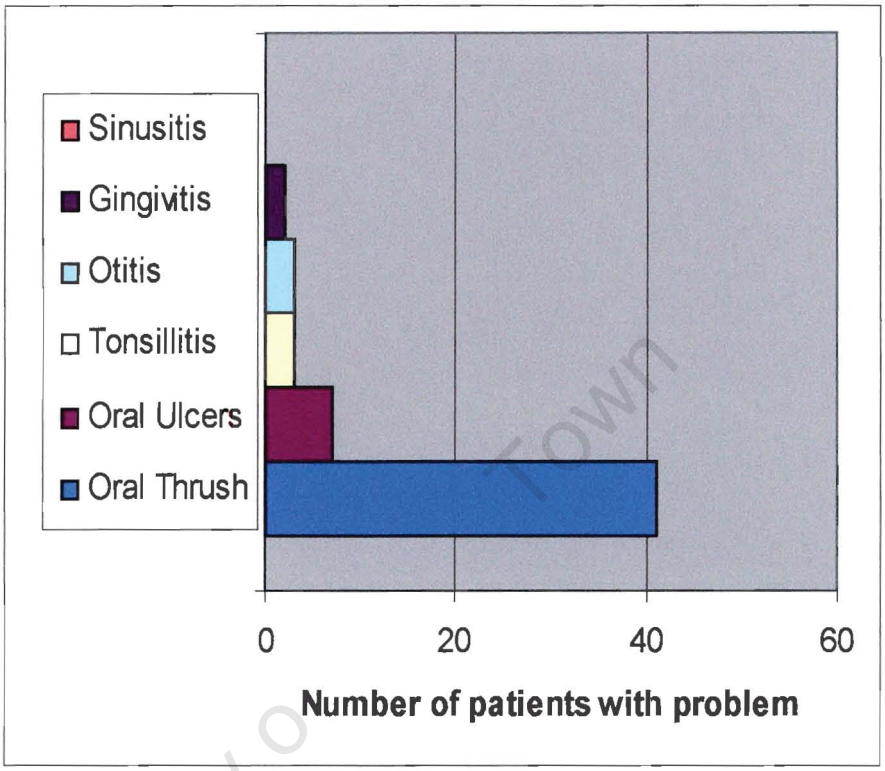
Graph 7 Dermatological Problems

	25
Papular Urticaria	9
Abcess/infection	8
Seborrhoeic Dermatitis	6
Herpes Zoster	4
Fungal Infection	4
Kaposi's Sarcoma	3
Bed Sores	3
Folliculitis	2
Scabies	2
Leg Ulcer	2



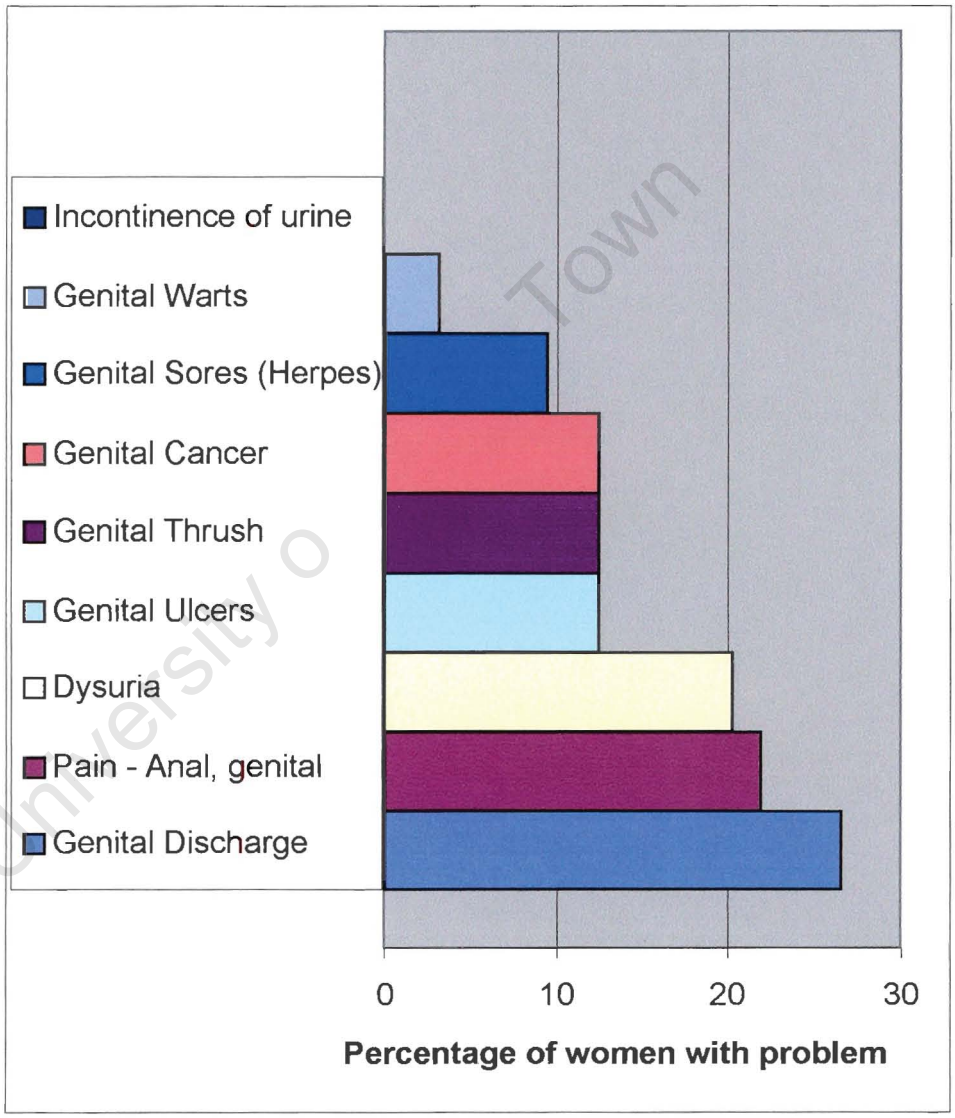
Graph 8 Oral ENT Problems

Oral Thrush	41
Oral Ulcers	7
Tonsillitis	3
Otitis	3
Gingivitis	2
Sinusitis	



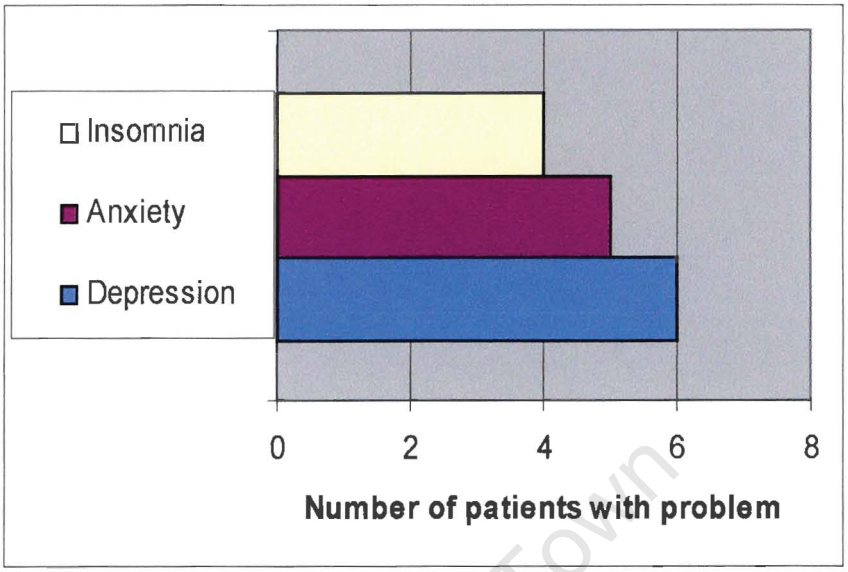
Graph 9 Genito Urinary Problems (Female%)(N=64)

	Female%	Female
Genital Discharge	27	17
Pain - Anal, genital	22	14
Dysuria	20	13
Genital Ulcers	13	8
Genital Thrush	13	8
Genital Cancer	13	8
Genital Sores (Herpes)	9	6
Genital Warts	3	2
Incontinence of urine	0	0
		64



Graph 10 Mood Problems

Depression	6
Anxiety	5
Insomnia	4



Graph 11 General Problems

Loss of weight	91
Lymphadenopathy	72
Weakness	69
Night Sweats/fever	20

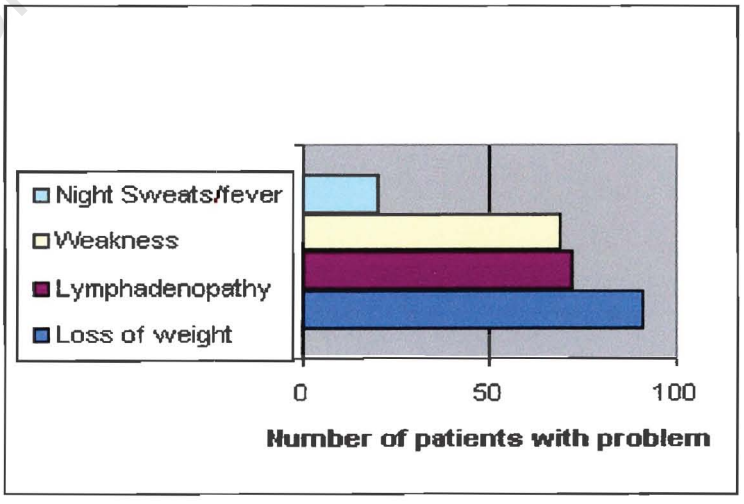
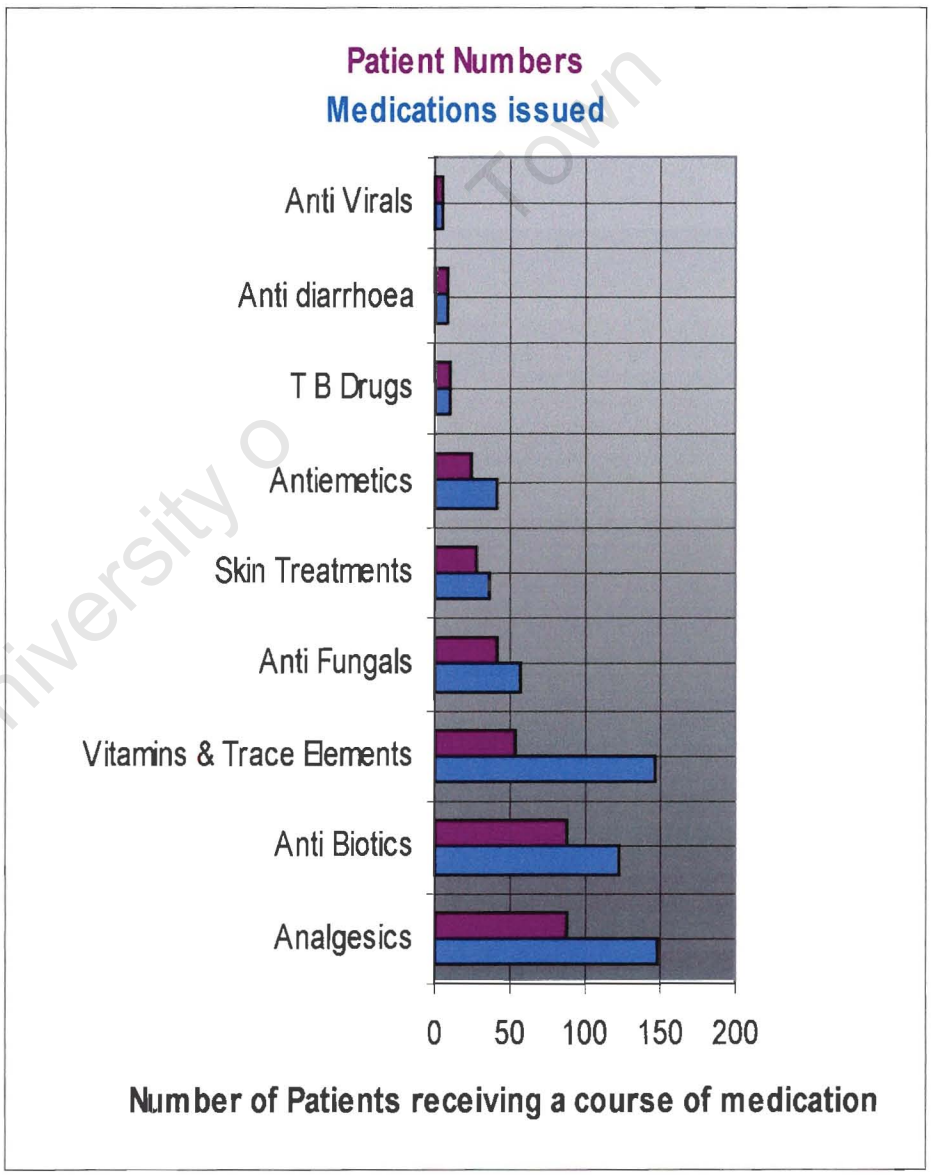


Table 2 Summary of Patients and medications issued

The number of analgesics issued to patients;	147
The number of patients who were issued analgesics;	88
The number of antibiotics issued to patients;	122
The number of patients who were issued antibiotics;	88
The number of vitamins issued to patients;	147
The number of patients who were issued vitamins;	53
The number of antifungals issued to patients;	57
The number of patients who were issued antifungals;	41
The number of dermatological treatments issued;	36
The number of patients who were issued dermatological treatment;	27
The number of antiemetics issued;	41
The number of patients who were issued antiemetics;	24
The number of TB medication issued;	10
The number of patients who were TB medication;	10
The number of antidiarrhoeals issued;	9
The number of patients who were issued antidiarrhoeals;	9
The number of antivirals issued;	6
The number of patients who were issued antivirals;	6

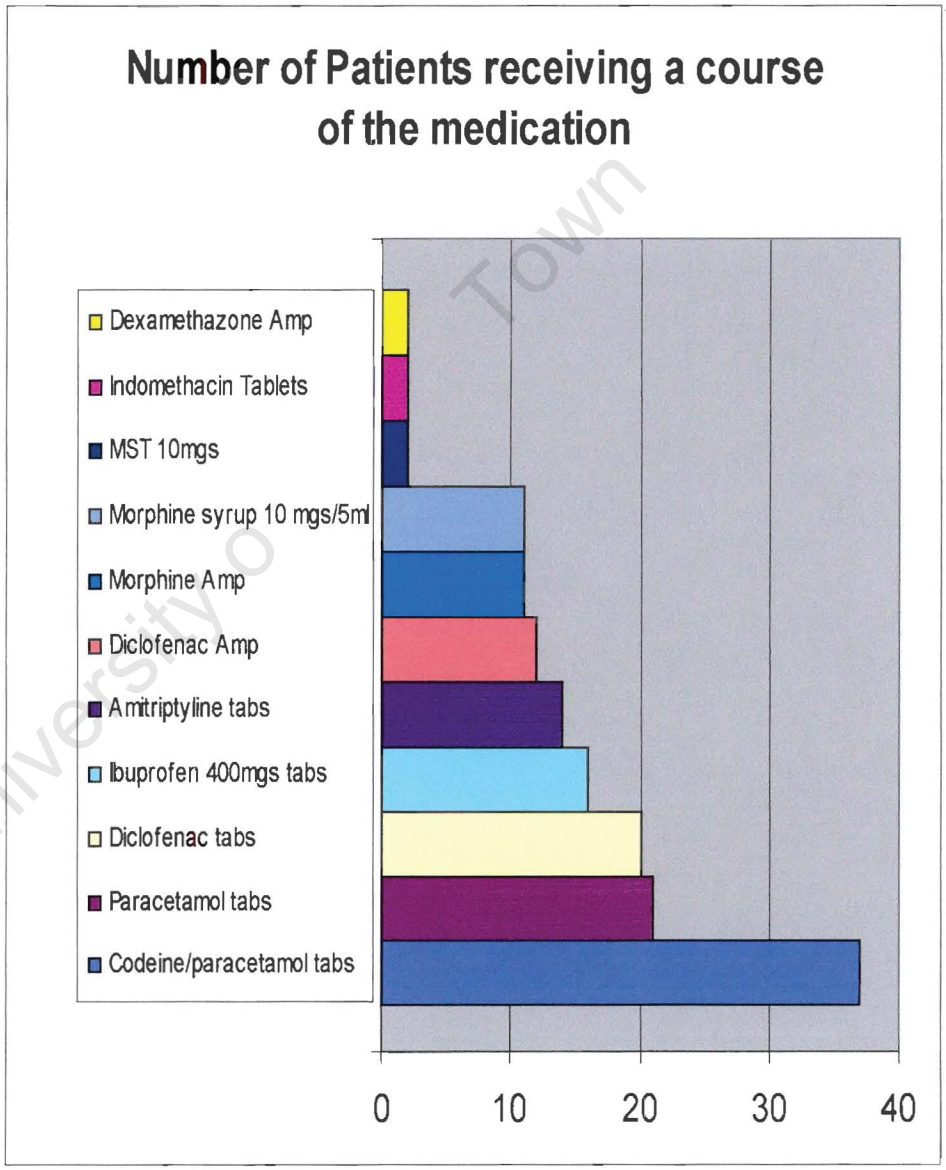
Graph 12 Summary of medications

	Meds	Patients
Analgesics	148	88
Antibiotics	122	88
Vitamins & Trace Elements	147	53
Antifungals	57	41
Dermatologicals	36	27
Antiemetics	41	24
T B Medication	10	10
Antidiarrhoeals	9	9
Antivirals	6	6
Rehydration	3	3
Antacids	2	2
Bronchodilators	1	1
Diuretics	1	1



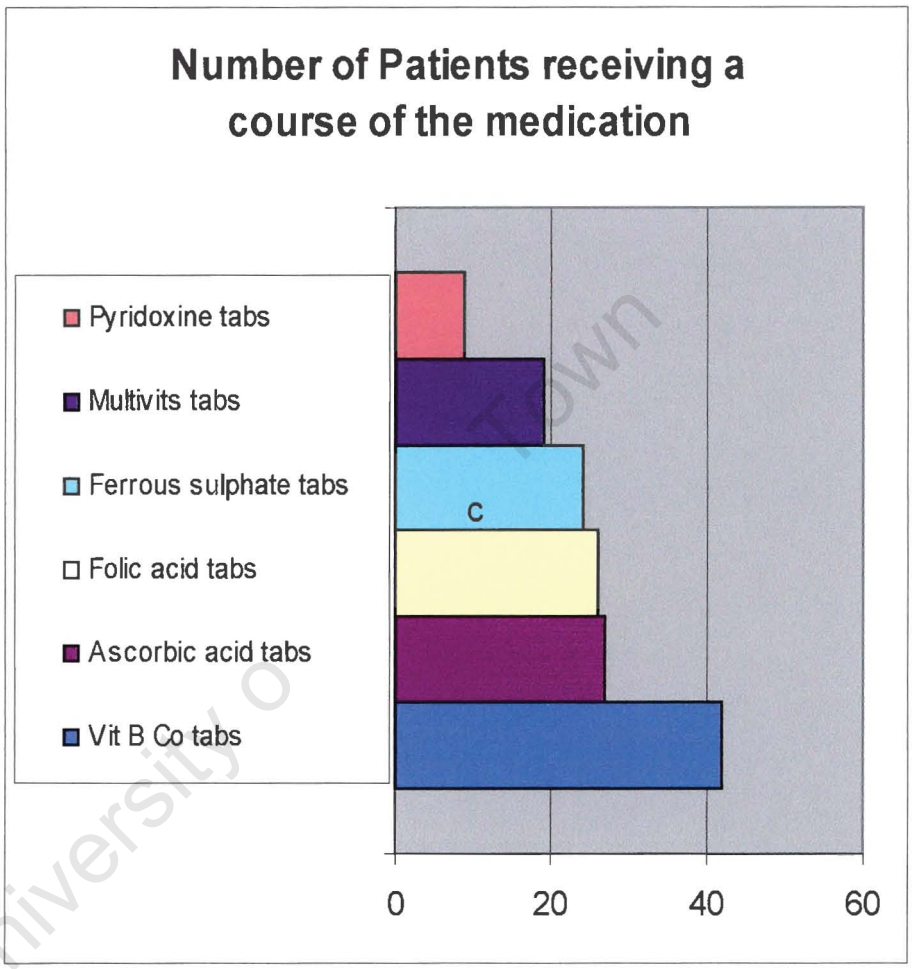
Graph 13 Analgesics

Codeine/paracetamol tabs	37
Paracetamol tabs	21
Diclofenac tabs	20
Ibuprofen 400mgs tabs	16
Amitriptyline tabs	14
Diclofenac Amp	12
Morphine Amp	11
Morphine syrup 10 mgs/5ml	11
MST 10mgs	2
Indomethacin Tablets	2
Dexamethazone Amp	2



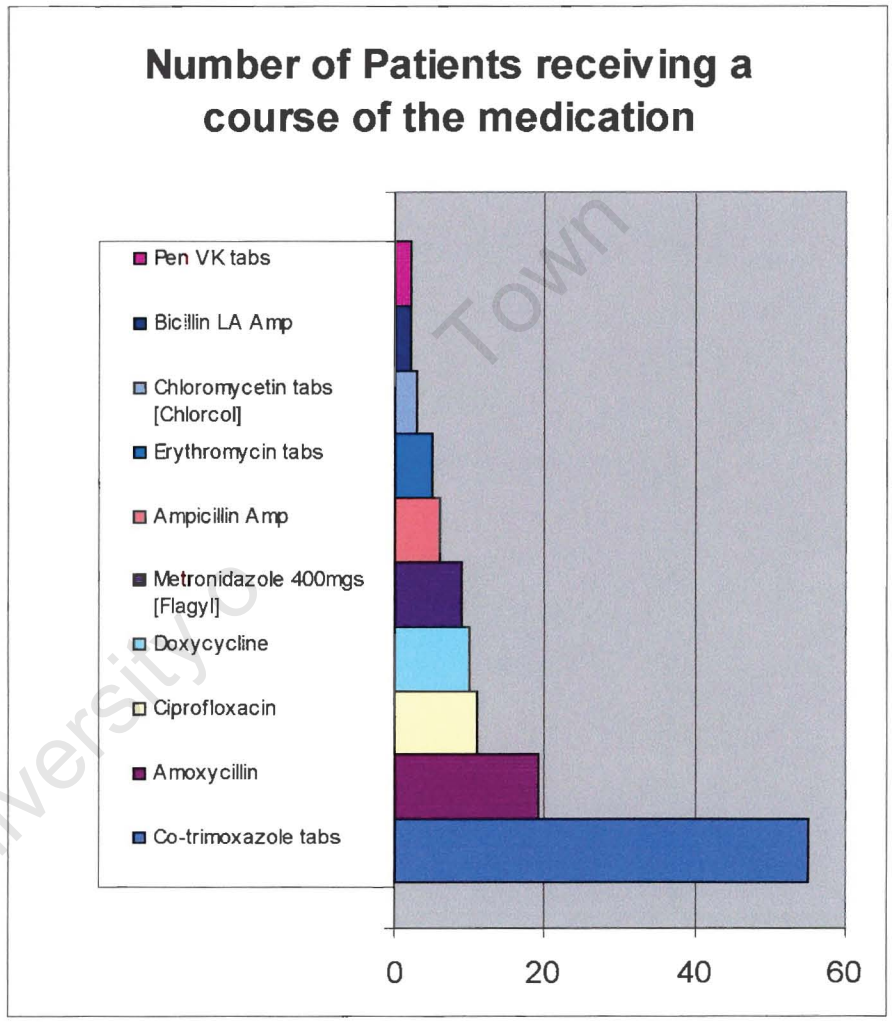
Graph 14 Vitamins & Trace Elements

Vit B Co tabs	42
Ascorbic acid tabs	27
Folic acid tabs	26
Ferrous sulphate tabs	24
Multivits tabs	19
Pyridoxine tabs	9



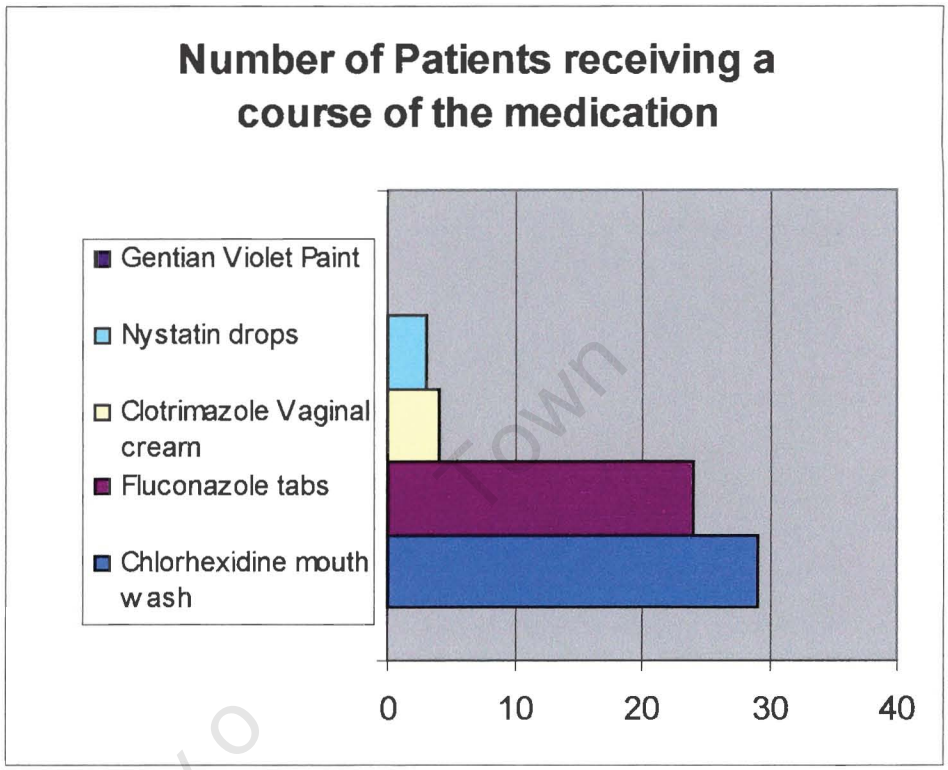
Graph 15 Antibiotics

Co-trimoxazole tabs	55
Amoxycillin	19
Ciprofloxacin	11
Doxycycline	10
Metronidazole 400mgs [Flagyl]	9
Ampicillin Amp	6
Erythromycin tabs	5
Chloromycetin tabs [Chlorcol]	3
Bicillin LA Amp	2
Pen VK tabs	2



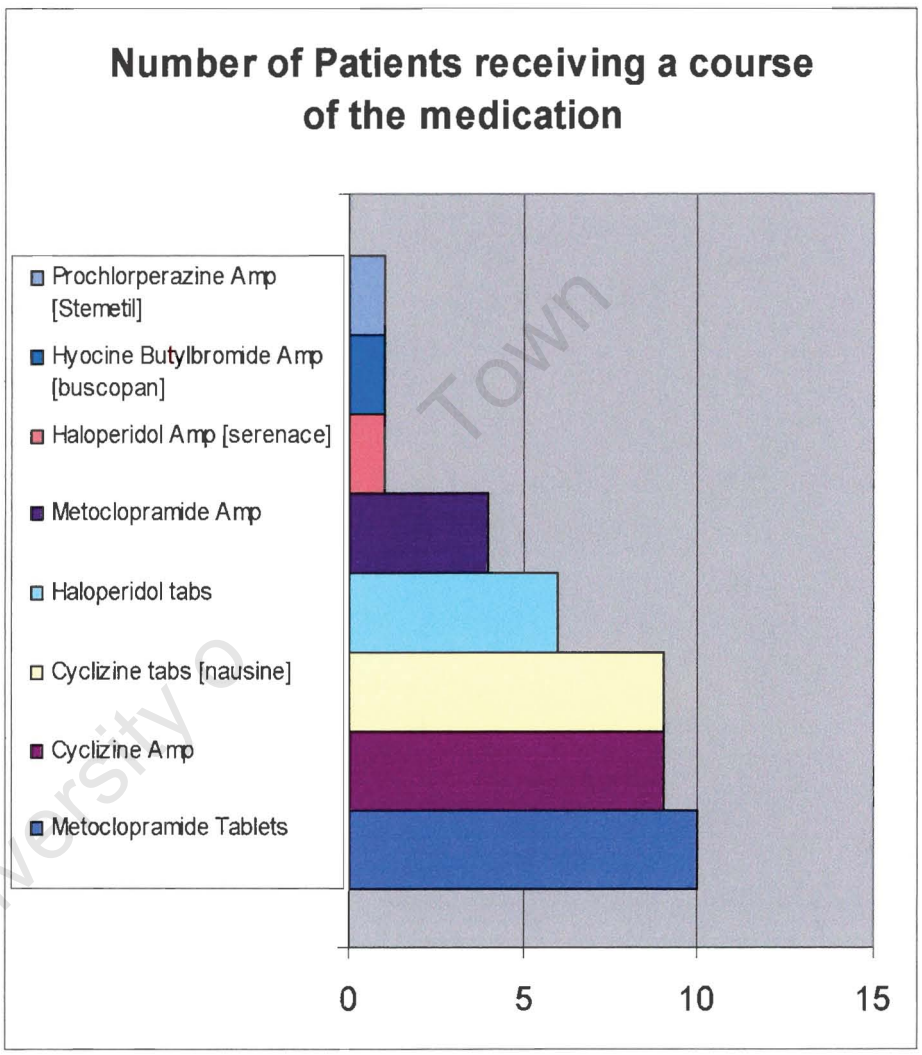
Graph 16 Antifungals

Chlorhexidine mouth wash	29
Fluconazole tabs	24
Clotrimazole Vaginal cream	4
Nystatin drops	3
Gentian Violet Paint	0



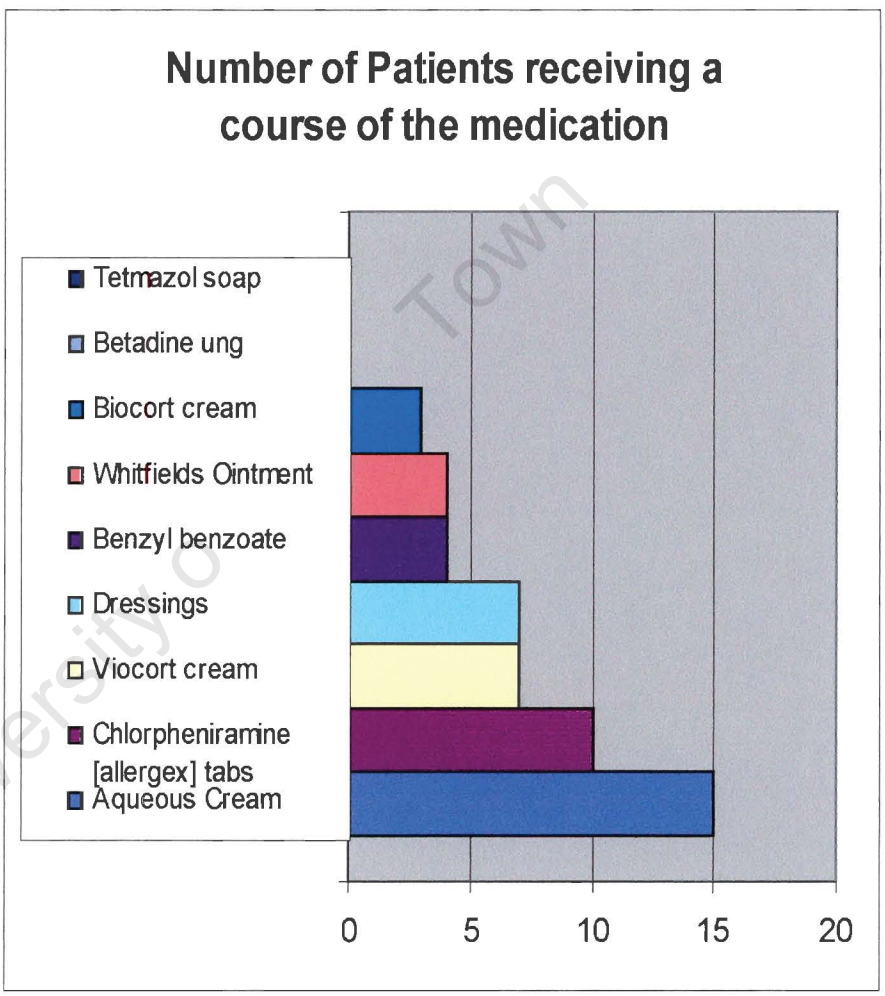
Graph 17 Antiemetics

Metoclopramide Tablets	10
Cyclizine Amp	9
Cyclizine tabs [nausine]	9
Haloperidol tabs	6
Metoclopramide Amp	4
Haloperidol Amp [serenace]	1
Hyocine Butylbromide Amp [buscopan]	1
Prochlorperazine Amp [Stemetil]	1



Graph 18 Dermatological Treatments

Aqueous Cream	15
Chlorpheniramine [allergex] tabs	10
Hydrocortisone acetate, diiodohydroxyquinlione, chlorbutal cream	7
Dressings	7
Benzyl benzoate	4
Benzoic acid compound	4
Hydrocortisone acetate cream	3
Betadine ung	0
Tetmazol soap	0



Chapter 5 Discussion

5.1 Patient Characteristics

5.1.1 Gender and Race

All our patients were black Swazi speaking South Africans. 93% lived within 12kms of the ACTS clinic, and 7% lived within 20kms of the clinic. They were all living in the Northern Nzikazi area of Mpumalanga, in a rural poor resourced area. Only 2 patients were employed at the time of the research. A minority had been previously employed in Gauteng in the cities, but had returned home to ageing parents or wives when they become too ill to work. Apart from the patients who were over 60 years of age, who were receiving old age pensions, none of our patients were receiving disability grants, or pensions from their work. This has serious implications for the provision of medical care for patients in the rural areas, as they are totally dependent on the state, or charity organisations for their care.

More women [64%] than men [36%] were included in the study. In research conducted in a rural hospital in Zululand between 1989 and 1992, the sex ratio was M:F, 1:1.4.[8] As it is generally believed that sexual transmission is more efficient from male to female, than from female to male, we can expect the incidence of HIV infection in South African woman to increase over that in males. In general more women attended the clinic, and more women were referred by the community volunteers and home based care. This might also reflect the situation in the rural arears, where many men have to leave to work in the towns. In sub-Saharan Africa more women are known to be infected by the HIV virus than men.

5.1.2 Average age

The average age of patients seen at the clinic was 39 years, with a peak between 30 and 40 years in females, and in males between 35 and 40 years. In the study of HIV positive patients admitted to Baragwanath Hospital the peak was between 20 and 29 years in females, and 30-39 years in males.[3] However only half of those patients were late stage HIV/AIDS. In our study we saw more older woman with late stage disease. A reason for this could be that the older women became infected from their husbands when they returned from the urban areas. In the study of HIV positive gold-miners admitted to hospital at Welkom, the average age was 37.9 years.[11] In this study the average age was 39. The oldest patients seen in our study were between 70 and 75 years, both male and female.

5.1.3 Testing and Stigma attached to being HIV positive.

All patients with World Health Organisation [WHO] clinical signs of stage III and IV HIV/AIDS were offered HIV testing at the ACTS clinic. Not all patients seen only in their homes were offered testing due to the difficulties of testing in the field. Many patients with WHO signs of stage III or IV did not sign the consent form due to the stigma associated with HIV/AIDS, or because they were in denial that they were HIV positive. These patients were not included in the research. 75 patients were tested with the Rapid HIV test at the clinic and 5 had additional confirmatory HIV tests sent to the laboratory. It was accepted that the other 25 were stage III or stage IV purely on clinical grounds according to the WHO criteria. Elisa tests were not done routinely due to the cost involved.

5.1.4 Home and Clinic Visits

Due to the fact that the doctors were usually consulted at the clinic, and the nurses usually did home visits, 58 of the patients were seen by a doctor at the clinic, and 3 at

home. 34 were seen by a nurse at home and 5 at the clinic. 41 of the patients were already being cared for by community volunteers. These volunteers were present on the home visits, and discussed the care plan with the nurses.

5.2 Common medical problems seen in late stage HIV/AIDS

5.2.1Pain

91% of our patients reported pain in one or more sites. 40% had peripheral neuropathy. In the multi centre French National Study 52% of patients reported pain.[12] However in reasearch conducted in the 1980-1990s in Uganda, Zaire and Tanzania there was no mention of pain.[4] Chest pain, abdominal pain, and headache were reported by caregivers as frequent symptoms prior to death in the rural Tanzanian study conducted in 1992.[7] However in reasearch papers published after 1998, there was a strong emphasis on pain as a underdiagnosed problem in HIV/AIDS. [31,32,33&34] In a study done in Los Angeles in December 2000, 151 adults with late stage HIV/AIDS were interviewed. Almost all participants [83%] reported AIDS-related pain in the last 3 months.[32] Pain symptoms and pain distress tended to vary with ethnicity with Latinos expressing more symptoms and pain distress than African Americans.[32] In a study in Chicago pain is the commonest reason for hospitalization of people with HIV/AIDS.[33] In our research we asked every patient if they had pain. In other studies in Africa this might not have been done.

In our study 29% of patients reported only one pain, 38% had two pains, 21% had 3 pains and one had 4 pains.

5.2.2 Loss of weight and weakness

91% of our patients reported loss of weight. As most of them had not been previously weighed it could not be confirmed if their weight loss was more than 10%. Many had

severe wasting especially in the last few months of life. In the Zairen, Ugandan and Tanzanian studies weight loss was also the commonest reported symptom, with 99%, 82% and 91.5% respectively.[4] Weight loss is often associated with asthenia or weakness. Weakness was reported in 69% of our patients and in 91% of patients in the Zairen study, and 97% of patients in the Tanzanian study.[4] Weight loss was only reported in 31% of patients in the french study but these patients were not only late stage HIV/AIDS. [12]

5.2.3 Fever and night sweats

In our patients 20% complained of fever or night sweats on the day of the visit. In the French study 27% reported fever.[12] In the rural Tanzanian study, 76% were reported to have had fever just prior to death.[7] In the Zairen study 54% reported fever for longer than a month. In Ugandan, 79%, and in Tanzanian, 79%.[4] It is not surprising that fever is common in Africa, due to the high incidence of TB and other infections. Our lower incidence of fever may be due to the fact that only fever on the day of the visit was reported.

5.2.4 Generalised Lymphadenopathy

Bilateral lymphadenopathy of the cervical, auxillary and epitrochlear glands was found in 72% of our patients. The lymph nodes were smaller than 2cm and tended to get progressively smaller in stage IV disease. Similar findings were found in the Baragwanath study.[3] Three of the patients had unilateral larger glands and in these patients TB was diagnosed by fine needle aspiration.[FNA] Generalised lymphadenopathy was found in 11% of patients in the Zairen study, 20% of patients in the Ugandan study and 36.5% of patients in the Tanzanian study.[4] The high

incidents of lymphadenopathy in our study was probably due to the fact that it was looked for in every patient.

5.2.5 Respiratory Problems

61% of our patients reported respiratory problems. 58% cough. 53% chest pain. and 15% dyspnoea. In the Zairian study. 37% reported cough. in the Ugandan study 41%. and in the Tanzanian study 42%.[4] In Zairen 23% reported dyspnoea and in Ugandan 21%. In another rural Tanzanian study 56% of men and 47% of women reported chest pain.[7]

Lower respiratory tract infections for the most part were considered to be due to bacterial pneumonia presenting with recent onset of pain. fever and cough. Many responded well to amoxycillin. Acute bacterial pneumonia is commonly reported in all African studies. In both the Baragwanath and Gold Miner studies it was almost as prevalent as pulmonary TB.[3&11]

All our patients received prophylactics with TPM-SMX. We do not know if any of our patients suffered from PCP because it is difficult to confirm PCP diagnosis without secondary level resources – however. it is felt that PCP is not as common in African adults as in patients of European descent.[27] 33% of our patients were on current or past TB treatment. TB was diagnosed in these patients either by smear positive sputums. chest x-ray or FNA of glands. In addition to the patients diagnosed with either pulmonary or extra-pulmonary TB. more patients were suspected by us of mycobacterial infection but were not on TB treatment. It is unknown how many were infected with atypical mycobacteria. However in the study conducted in Johannesburg. and also in the Western Cape study. it was found that MAC was not common in African patients.[9] Our incidence of 33% of our patients with TB is consistent with prevalence in other African studies.[4] TB was the prime cause of death

in HIV positive patients in a large hospital in Cote d'Ivoire.[6] 28% of HIV positive patients presented with TB in the Baragwanath study.[3] 45% had a dignosis of TB in the northern Zululand study.[8] In the study of gold miners, TB was the single most common cause of hospitalization.[11] However there is an extra occupational component to TB in gold miners because of their exposure to silica dust, and their exposure to TB in the enviroment is high in that they live in crowded hostels. The Western Cape has the highest incidence rate of pulmonary TB on the continent of Africa, and this was reflected in the very high incidence of pulmonary and extrapulmonary TB in HIV/AIDS patients in the Western Cape study.[10] Extra pulmonary TB was diagnosed in 28% of HIV+ve patients and pulmonary TB in 18%, 46% in Total.

5.2.6 Neurological Problems

60% of patients in our study presented with neurological problems. 40% of our patients complained of burning pain in the feet. For some patients this was their main complaint. This is similar to research conducted in Boston where N Katz found that neuropathic pain is highly prevalent in AIDS patients and is usually undertreated.[31] It is interesting that this sympton was not reported in earlier African studies.[4] It is now being widely reported especially in American and European countries. It was assumed that it was not a common problem in Africa but our study found this not to be so.

12% of our patients complained of severe headache. 2% proved to have cryptococcal meningitus which was diagnosed at the district hospital. Cryptococcal meningitus was the commonest cause of death in the gold miners study.[11] It was also the proven cause of death in 3% of patients from Cote d'Ivorie.[6] We suspected that more of our patients had opportunistic infections of the brain but this could not be

confirmed due to the fact that most patients were not investigated. Autopsy studies performed in Africa as well as in African AIDS patients treated in Europe suggest that toxoplasmosis of the brain is a frequent complication of AIDS in Africa.[6] In a post mortem study performed in Zaire, toxoplasmosis infection was observed in 8% of 62 patients who died of AIDS.[4] In Africa the incidence of TB, especially extra pulmonary TB, is high in people with late stage HIV.[3] It is therefore to be expected that TB meningitis is particularly frequent in Africa.

8% of our patients reported a recent or previous episode of herpes zoster with post herpetic pain. Some patients had had up to four episodes of herpes zoster. In the Baragwanath study herpes zoster was the first manifestation of HIV infection in 13% of the clinic patients.[3] In Africa 10-15% of patients with middle or late stage disease had a history of recent herpes.[4] In the Zairen study 9% and Ugandan 10% and Tanzanian 6.5% of patients reported a history of herpes zoster.[4]

7% of our patients reported confusion, 6% memory loss and 4% ataxia. We presumed that this was due to AIDS dementia but it could also have been due to other intra-cranial opportunistic infections. In the Baragwanath study dementia was reported as being uncommon, but this may have been due to the lack of sensitive cognitive testing and good family histories.[3] In the Western Cape study only 6% of black patients showed signs of AIDS dementia as opposed to12% of white patients.[10] The diagnosis of subtle neurological change is difficult, and cultural factors have to be taken into account: however this should not be a factor when more marked signs of dementia are present The low incidence of HIV encephalopathy in black patients therefore requires further careful prospective study to confirm this finding.

Paralysis was reported in 2 patients: 1 flacid and 1 spastic. We assumed that the flacid paralysis was a polyradiculopathy and was associated with difficultly in

passing urine. The spastic paralysis we assumed could be a myelopathy of the spinal cord. One patient complained of sudden onset of blindness which was presumed to be due to cytomegalo virus retinitis. One patient reported recent onset of deafness. One patient had a recent onset of hemiparesis. This was presumed to have been caused by the HIV virus as the patient was young and not hypertensive.

5.2.7 Gastro-Intestinal Problems [GIT]

In our study 54% reported GIT problems and 26% reported diarrhoea on the day they were seen. This might not be a true reflection of the severity of the problem as many had had diarrhoea in the past.

In the studies done in Zaire, Uganda and Tanzania, diarrhoea for more than 1 month was reported in 41%, 60% and 75% of the patients respectively.[4] However in the Western Cape study, although diarrhoeal disease caused significant morbidity in both early and late HIV disease in Cape Town, prolonged unexplained diarroea was not common.[10] The lower rate of unexplained diarrhoea might be related to a lower rate of coccidial infections in that population. GIT symptoms were only seen in relatively few patients in the gold miners study and this may reflect geographical differences, and it may indicate that sanitation and water supplies in gold miners are unusally good for Africa.[11] In the French study diarrhoea was reported in 24% of the patients.[12] Most of our patients have access to piped water and this may reflect the lower than expected incidence of diarrhoea. Cryptosporidium, a common pathogen, is destroyed by boiling water, which is taught to all our patients. Further research is needed to identify common pathogens in our area.In the Zululand study 27% of AIDS patients reported loss of more than 10% of body weight or cachexia, with diarrhoea or fever either intermittent or constant for at least one month. This is similar to the picture of 'slim' disease seen in the rest of Africa.[8]

Loss of appetite was reported by 24% of patients. Interestingly this symptom was not recorded in either the Ugandan, Tanzanian, Zairen or French study.[12]

Vomiting was reported by 16% of patients. In our study this was often reported in the very terminal stage, and associated with either severe diarrhoea and abdominal pain, or with headache and fever. Vomiting was recorded in 20% of the patients in the French study and not at all in the Zairen, Ugandan or Tanzanian studies.

Vomiting tended to be recurrent and difficult to manage. The cause of the vomiting was usually not known. It could be related to inter-cranial pathology, GIT infections or electrolyte imbalances. There is very little literature on the causes of vomiting in late stage HIV patients. More has been written on nausea and vomiting in terminal cancer patients in industrialised countries.[39]

7% of patients reported dysphagia: this was most commonly due to oesophageal thrush and responded well to fluconazole.The commonest cause of dysphagia in the Milan study was oesophageal thrush.[17]

5.2.8 Dermatological Problems

48% of our patients reported some kind of Dermatological problem. The commonest problem was pruritus reported in 25% of our patients. This could have been caused by scabies, papular pruritic eruption, seborrhoeic dermatitus, eczema, folliculitis, psoriasis or fungal infections. All of these conditions were seen. Pruritus was reported in 30% of patients in the Ugandan study.[4] A generalised itchy papular eruption was seen in 20% of patients in the Zairen study, 36% in the Ugandan study and 70.5% in the Tanzanian study.[4]

Of the 10 patients in our study with bacterial skin conditions, 2 had extensive Hiradenititis Suppurativa of the axilla. 2 had deep black ulcers of the legs: clinically they appeared to be Bartenella Henselae infections, and responded well to

Erythromycin. Herpes zoster was seen in 3 patients and old scars in 8 others. Some of these had formed extensive keloid scarring.

Kaposi's sarcoma was seen in 3 patients, one on the tip of the nose and extensively on the palate, and two on the lower limbs and trunk. In the Western Cape study Kaposi's sarcoma was seen more frequently in white patients.[10] This was also the case in the research done at the HIV clinic in Johannesburg.[9]

3 of our patients had very extensive deep bed sores. These patients were cahextic and extremely wasted.

5.2.9 Oral problems

Oropharyngeal candidiasis was reported and seen in 41% of patients. We found it to increase in frequency as the disease progressed. The majority had pseudomembraneous candidiasis. It could have been possible that some erythematous candidiasis was missed. Angular cheilitis was also seen in a few patients. Severe oropharyngeal candidiasis extending into the oesophagus with symptoms of dysphagia and severe burning retrosternal pain was reported in 7 patients. Many of the patients had already received local treatment for oral thrush on many occasions from the government clinics, or the community volunteers, and some might have developed resistance to the drugs.[23]

In the Zairen study 47% reported oral thrush, 36% in the Ugandan study and 56% in the Tanzanian study.[4] In the French study 33% complained of a sore mouth.[12] 7 of our patients had apthous ulcers, 2 had gingivitis, and 3 had tonsilitis.

5.2.10 Genito-Urinary Problems

In 39% of our patients a genito-urinary problem was either reported or seen when the patient was examined. These figures reflect both male and female patients in the study. As only four cases of dysuria were reported in males, one non-painful genital

ulcer and one painful genital ulcer. the graph was corrected to give the percentage in female patients.

20% - dysuria. 27% - vaginal or cervical discharge. 22% - ano-genital pain. 13% - non-painful ulcers. 9% - painful ulcers. 3% - genital warts. 12% - vaginal thrush. and 12% - genital cancer.

Every late stage HIV/AIDS patient seen at the ACTS clinic received a speculum vaginal examination. It was assumed that the vaginal discharges were of mixed infection. which could include gonorrhoeae. chlamydia. trichomonas. bacterial vaginosis and candidiasis. In the study conducted in Kwazulu on HIV positive patients with vaginal dicharges. the commonest infection was Bacterial vaginosis. followed by Trichomonas vaginalis. Neisseria gonorrhoeae. and clamydia trachomatis. [19]

6 patients reported very painful sores around the vagina and anus. Many of these were extensive. extending for several centimeters. We presumed that they were caused by the herpes Simplex virus as they responded well to Acyclovir. In the Ugandan study. mucocutaneous genital herpes for longer than a month. was the third commonest cause for entry into stage four disease.[5] This was in contrast to studies in London on African Ugandans where it was not so common.

7 patients had carcinoma of the cervix. 2 were diagnosed on PAP smears. The others had clinically invasive carcinoma. 2 patients had fistulas into the rectum and 2 had very large fungating cancers. Patients with HIV have a nine fold risk of developing Cancer of the cervix.[38]

5.2.11 Mood Problems

In our study 6% of our patients presented with depression. 5% presented with anxiety. and 4% with insomnia. In the multi-centre French National study. 40% presented

with anxiety, 24% with depression, and 37% with sleep disturbances.[12] In none of the African studies were any of these symptoms mentioned. More research needs to be done in this area in South Africa.

5.3 Resources used

5.3.1 Medication

5.3.1.1 Analgesics

Analgesics were prescribed according to the WHO analgesic ladder. Community volunteers were allowed to prescribe paracetamol. Many of the patients had already been receiving paracetamol or other over the counter analgesic medication prior to being seen by the ACTS medical staff. Paracetamol was prescribed for minor pain, night sweats and fever.

Codeine/paracetamol tablets were the most commonly prescribed analgesics, and were used for moderate pain, not responding to paracetamol, and also for the control of chronic diarrhoea. We found this to be a very useful drug as many of the patients had both moderate pain and diarrhoea.

Diclofenac, Ibuprofen and Indomethacin, all non steroidal anti inflammatory drugs [NSAIDS], were used mainly for arthralgia, post herpetic pain, pain from genital herpes, and in combination with amitriptyline and opiates, for the pain of peripheral neuropathy.

Amitriptyline was used for post herpetic pain and for neuropathic pain. To be effective we found that it had to be combined with NSAIDS or opiates or both. Patients complained of the side effects of a dry mouth at the higher doses, but they appreciated the fact that they were able to sleep better.

If the pain was not controlled on maximum doses of codeine. we moved to morphine suspension. starting at 5mgs 6 hourly and increasing to 10mgs and upwards. During the study period we did not have any patients on 30mgs or more. We found morphine suspension to be a very useful drug. as it was easy to swallow. controlled severe pain. as well as controlling chronic diarrhoea in AIDS patients. We always gave it in combination with cyclizine or haloperidol to prevent vomiting. We did not use many morphine slow release tablets [MST] due to their high cost.

Two of our patients with cryptococcal meningitis and severe headaches responded well to injections of dexamethasone in combination with morphine suspension. This appeared to partially relieve the headache before their demise.

5.3.1.2 Antibiotics

The most commonly prescribed antibiotic was cotrimoxazole. It was usually given as a prophylactic drug to prevent Pneumocystis Jiroveci. toxoplasmosis and other bacterial infections. It was also prescribed in higher doses to patients who had not responded to Amoxycillin with suspected Pneumocystis Jiroveci.

Amoxycillin or Ampicillin were used as first line antibiotics for suspected bacterial pneumonia's and the patients usually responded well.

Ciprofloxacin. Doxycycline and Metronidazole and Bicillin were used to treat STI's.

Erythromycin was used to treat bacterial folliculitis probably caused by Bartenella Henselae and penicillin was used to treat bacterial skin infections.

Chloramphenicol was prescribed in three patients with fever. abdominal pain. and diarrhoea. where salmonella typhimurium was suspected. Only one patient appeared to respond to the treatment.

TB medication was issued at the Government clinics. but our volunteers provided direct observed therapy. [DOTS].

5.3.1.3 Antifungals

Many of our patients presented with Candidiasis: oral, oropharyngeal, oesophageal or vaginal. The community volunteers were allowed to give out Gentian Violet, and Mycostatin drops for oral candidiasis. Many of the patients had been treated with these agents prior to being referred to the nurse or doctor. We found 0.2% Chlorhexidine mouthwash very effective in controlling oral candidiasis. If the patient had not responded to previous treatment of the oropharyngeal thrush, or we suspected oesophageal candidiasis we prescribed Fluconazole for three days. We realised that optimal treatment should be for 7-14 days, but due to the fact that the drug was not readily available and extremely expensive we limited the treatment to 3 days, followed by Chlorhexidine mouthwash. We found it to be extremely effective in the terminal phase, allowing the patient to swallow both their medication and take in small nutritious meals.

5.3.1.4 Antivirals

We found Acyclovir 200mgs five times a day for 5-7 days extremely effective in controlling the pain and treating the sores in Genital herpes. Five patients were treated this way during the research period. One patient was treated for herpes zoster with 800mgs Acyclovir four times a day for seven days with excellent results.

5.3.1.5 Antidiarrhoeals

The volunteers were trained to give the sugar salt solution, as well as food based fluids to patients with diarrhoea. If the patient was referred to us with severe dehydration or not able to take oral fluids we would rehydrate intravenously with Ringers Lactate, followed by oral rehydration.

For the patients with chronic diarrhoea. we found a combination of Loperamide with codeine/paracetamol tablets to be effective in controlling the diarrhoea. If codeine was not effective we started the patient on low doses of Morphine suspension.

5.3.1.6 Antiemetics

We used Metoclopramide as our first line antiemetic where both diarrhoea and vomiting were present. or where oropharyngeal thrush was also present. Metoclopramide acts on the 5HT receptors in the Gut as well as on the dopamine receptors in the Chemoreceptor trigger zone. We used Cyclizine or haloperidol as our first line drugs if we suspected that renal failure. electrolyte disturbances. morphine or intracranial infections caused the vomiting. Cyclizine acts on the vomiting centre. and haloperidol on the Chemoreceptor trigger zone.

We initially gave the medication by the intramuscular route. followed by the oral route. Although we do have a syringe driver. we rarely used it due to the high cost of ampoules of Haloperidol and Cyclizine. and due to the fact that our community volunteers have not yet been trained to use it.

Generally we found vomiting in late stage HIV/AIDS difficult to control. In most cases we did not know what was causing the vomiting. and could only make assumptions on clinical presentations. More research is needed in this area.

5.3.1.7 Dermatological Treatments

The community volunteers were allowed to give out Aqueous Cream for dry itchy skin. Benzyl Benzoate and tetmosol soap for Scabies. and Betadine ointment for septic sores. Aqueous cream and Chlorpheniramine tablets were prescribed for pruritic skin problems. Steroid creams were prescribed for seborrhoea dermatitis and Whitfield's ointment for superficial fungal infections. Bedsores were initially dressed with Flamazine dressings. followed by saline dressings.

5.3.1.8 Vitamins and trace elements.

Most patients. if not terminally ill. were prescribed vitamins and trace elements. We used mainly Vitamin B co. Ascorbic acid. Folic acid. Ferrous sulphate. Multivitamins and Pyridoxine.

5.3.2 Human Resources

Community volunteers are very useful in providing basic nursing care and social and spiritual support to the late stage HIV/AIDS patients. Our records show that community volunteers were already caring for forty-one of the patients in this research. In most cases they had already initiated treatment within their scope of practice.

Professional Nurses. trained in health assessment and treatment. as well as in palliative care. are an invaluable asset in the community. They. together with the patient's family and community volunteers. are able to provide a care plan for the patient. They are also able to train and support the volunteers in the work as well as diagnosing and treating infections and providing pain and symptom control. In this research two professional nurses went out every day to assess and treat the patients in their homes. whilst a third professional nurse remained in the clinic to assist the doctors and consult with patients. The nurses were all trained in health assessment and treatment. and are in the process of training for their palliative care diploma.

Two doctors assessed and treated patients at the clinic: they also received reports from the nurses on a weekly basis. and saw referred patients either in their homes or at the clinic.

Community Doctors need to be trained in HIV/AIDS as well as palliative care in order to support the professional nurses at a practical level.

Further research is however needed to identify all the resources needed and the costs involved in providing care and support to late stage HIV/AIDS patients at a Primary Health Care level.

5.4 Strengths and Limitations of the Study

In this study we concentrated more on the prevalence of the symptoms and signs and related them to opportunistic and non-opportunistic infections. Most of the studies done in Africa on late stage HIV/AIDS patients were mobidity and mortality studies, concentrating more on diagnosed opportunistic infections. Due to the fact that we had limited access to laboratory and x-ray facilities we were not able to diagnose many of the AIDS defining diseases such as Pneumocystis jiroveci or cryptococcal meningitus.

Another limitation of the study was that the data collection period was short, only 8 weeks. Therefore the sample size was only 100 patients. The small sample size was also due to the fact that patients were not willing to sign the consent form due to the stigma associated with AIDS. These patients were excluded from the study.

Only medical problems reported or seen on the particular day that the patient was seen were recorded. A more accurate picture might have been obtained by asking about medical problems that had occurred during the past month.

The "resources used" was data that was collected together with the medical problems. However this was a weakness in the study as it was not researched in the literature, as it is a whole study on its own.

The study did not evaluate the appropriate level of care, and who should be doing what.

The strength of the study was that it showed that it is possible to identify many medical conditions in late stage HIV/AIDS without laboratory or x-ray facilities. Most of the medication required to treat these conditions is on the essential drug list for primary health care.

5.5 Conclusion

Pain is a major medical problem in late stage HIV/AIDS patients. In research done in Africa very little has been reported on pain. In our study pain was reported in 91% of patients. Another area where little has been done in Africa. is in assessing symptoms of anxiety. depression and insomnia in late stage HIV/AIDS patients.

The high instance of cancer of the cervix in rural HIV/AIDS patients needs to be addressed.

The high incidence of oropharyngeal and oesophageal candidiasis. which is relatively easily treated with topical and systemic antifungals. is of vital importance. Treatment will rapidly improve the ability of the patient to swallow and improve their nutritional status. Very little has been written on the frequency of vaginal thrush in late stage HIV patients. We found this to be a common and debilitating problem.

The lower incidence of diarrhoeal disease in areas with piped water supplies is significant. This is an important intervention in rural areas. Further research needs to be done on the causes of diarrhoeal disease in different areas of South Africa.It appears that the protozoal infections may not be as common in South Africa as in Central and East Africa.

Very little research has been done on the causes of nausea and vomiting in late stage HIV/AIDS patients. We found this to be a relatively common problem in the terminally ill patients. but it has hardly been documented in research in Africa.

The high incidence of TB all over Africa highlights the need for effective TB control programs. Prophylactic treatment with INH could be a cost effective intervention in high prevalece areas. Extrapulmonary TB is common in late stge HIV/AIDS and is often difficult to diagnose at a PHC level. We were able to diagnose pleural effusions on clinical examination, but then had to refer the patients to the district hospital for a confirmatory chest X ray. Many patients did not go to the hospital for various reasons, and were lost. A simple X- ray machine at the clinic would have been a valuable tool.We were able to perform fine needle aspirations of glands at the clinic, and this saved the patients referral to the district hospital. Due to the fact that that we were an NGO clinic we were also unable to issue TB medication, and again had to refer patients for treatment, and again some patients did not go for various reasons. It would have been easier for the patients if they had been able to have all their tests and treatment for TB done at one centre close to their home.

Genital ulcers and discharges are common: early recognition and treatment of these STI's will greatly reduce the HIV transmission rate and relieve a lot of pain and discomfort.

Most Dermatological conditions are relatively easily recognisable and can be effectively managed with relatively cheap remedies.

Generally the majority of reasearch in African AIDS patients has been on morbidity and mortality studies, concentrating on opportunistic infections and their diagnosis and management. Very little research has been done in the area of palliative care. However this research on late stage HIV/AIDS highlights the challenge of providing both curative and palliative care at the same time, especially in a resource poor setting where diagnostic tools and treatment methods are limited.

The common medical problems of late stage HIV/AIDS patients could be managed at a Primary Health Care level, provided that the doctors and nurses working at that level are trained in HIV/AIDS management, and also in Palliative care, and that the essential drugs are available.

Community volunteers are able to provide basic nursing care, and manage minor medical problems if they are adaquately trained and supported by professional medical staff.

5.6 Recommendations

The HIV / AIDS epidemic has impacted on all health services in South Africa. This study shows that, in the absence of antiretrovirals, stage three and four HIV / AIDS patients generally present with common primary care problems which can generally be treated with common primary care medications. The tables listing these problems and the medications can be used as a starting point for planning primary health care services for HIV / AIDS patients as well as for planning a curriculum for training primary care doctors, nurses and home carers.

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Appendices

Appendix 1: Clinic or Home Based Care Initial Visit

Questionnaire No ..... Date .....
Patients Name ..... No .....
DOB ..... Sex .....
Volunteer ..... Team .....

Problem List

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....
7. .....
8. .....
9. .....

Items Issued

1. .....
2. .....
3. .....
4. .....
5. .....
6. .....

Time Spent with patient .....(mins) Distance Travelled.....Kms (vehicle)
Time Travelled.....(on foot)

Follow Up Dates
Volunteer ....
Auxiliary Nurse
....
Professional Nurse ....
Doctor .....

Name ..... **Signature** .....

Appendix 2: Satiso Salabagulako

Niyamenywa kuvolontiya kutemfundvo teluphenyo. Sihlanganisa lwati ngetinkinga temphilo talabagula kakhulu ngesifo se ngculasi, i nalokudzingekako kubelapha.
Letimfundvo titawusita letinye tisebenti tetemphilo kwelapha labantfu labagula kakhulu ngalesifo.
Uma uvuma kubanyincenye yaletimfundvo, ligama lakho lingeke latiswe.
Kantsi futsi uma ungafuni kubayincenye yaletimfundvo, ukunankinga utotfola lusito lolufanako kubodokotela, kubonesi nakumavolontiya emphakatsi lakunakekelako.
Letimfundvo te Master's Degree livunyelwe yi university yase Cape Town.

Lifomu Lwesivumelwano

Incwadzi lekhomba inhlanganyelo kule project.
Ligama lwetimfundvo
Timphawu letibonakala kubantfu labadzala laphetfwe sifo sengculaza labahlala enyakatfo Nsikazi nasemakhaya
Ngifundze lokubhaliwe ngavisisa tidzingo netifiso tekufundza. futsi kune sikhatsi lesilingene sekubuta mibuto nekucabanga ngalendzaba. Letidzingo netifiso taletimfundvo tivisiseke kahle kakhulu kimi. Angika cindzeteleki kuhlanganyela noma ngayiphi indlela.
Ngivisisa kutsi kuhlanganyela kuletimfundvo kungukutinikela lokuphelele futsi ngingayekela noma nini nginga niki sizatfu kute likhambi lekwelapha leliphatsene nami noma simo setigulani futsi ngeku kufake kunakekela kutsi ngi/sigulani sitfola kimi/noma kudokotela waso.
Ngiyati labaseshi baseEthics noma Publications Committee eUniversity yase Cape Town basekele letimfindvo.

Ngitinikela kuhlanganyela kuletimfundvo

_____
Ligama lemhlanganyeli (sigulani/sihlobo semnakekeli)

_____ _____ _____
Indzawo Lilanga Fakadzi

Mniningwane ngadokotela

Ngiletse liphephandza lelibhaliwe lelimayelana naletimfundvo.
Ngivuma nekuphendvula yonke mibuto ngalokukhulu kutimisela esikhatsini lesitako.
Ngitinikela kulandzela lemiyalo lebhaliwe

_____ _____
Ligama ladokotela Sayina

_____ _____
Lilanga Indzawo

Appendix 3: Patient Information Leaflet

You are invited to volunteer for a research study. We are collecting information on the common medical problems that patients very sick with HIV/AIDS suffer from, and what is needed to treat their problems. The study will help other health workers treat people who are very sick with the HIV/AIDS virus.
If you chose to participate in this study your name will not be mentioned. If you do not want to be part of the study you will still receive the same care from the Doctors, Nurses and community volunteers who are caring for you.

Research Topic
Common medical problems seen in late stage HIV/AIDS in adult patients living in the northern Nzikazi area of rural Mpumalanga, and the resources needed for their care.
This study is for a Masters Degree and has been approved by the University of Cape Town.

Consent Form

I have read the above information on / heard the aims and objectives of this study and have been provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurised to participate in any way.
I understand that participation in this study is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will have no influence on the regular treatment that holds for my condition neither will it influence the care that I / the patient receives from my regular doctor.
I know that the Research, Ethics and Publications Committee of the University of Cape Town have approved this study.

I hereby give consent to participate in this study.

_____
Name of the Participant (Patient/care giving relative)

_____ _____ _____
Place Date Witness

Statement by the Doctor

I provided verbal and or written information regarding this study.
I agree to answer any Future questions concerning the study as best as I am able.
I will adhere to the approved protocol.

_____ _____ _____ _____
Name of Doctor Signature Date Place

Appendix 4: Table of Problems

Loss of weight	91	Oral Ulcers	7
Lymphadenopathy	72	Genital Sores (Herpes)	6
Weakness	69	Depression	6
Cough	59	Memory loss	6
Pain - Chest	53	Sebhoerric Dermatitis	6
Oral Thrush	41	Anxiety	5
Pain - feet	40	Constipation	4
TB	33	Incontinent of urine	4
Diarrhoea	26	Insomnia	4
Pain - abdominal	26	Ataxia	4
Skin pruritus	25	Herpes Zoster	4
Loss of appetite	24	Fungal Infection	4
Night Sweats/fever	20	Incontinent of faece	3
Dysuria	17	Tonsillitis	3
Genital Discharge	17	Otitis	3
Vomiting	16	Kaposi's Sarcoma	3
Pain - Anal, genital	15	Bed Sores	3
Dyspnoea	15	Genital Warts	2
Pain - Headache	12	Pain - eye	2
Nausea	10	Paralysis	2
Genital Ulcers	9	Oral infection	2
Pain - post herpetic	9	Folliculitis	2
Papular Urticaria	9	Scabies	2
Pain - epigastric	9	Leg Ulcer	2
Pain - Joint	9	Cancer	2
Genital Thrush	8	Deafness	1
Genital Cancer	8	Blindness	1
Abscess/infection	8	Hemiparises	1
Dysphagia	7	Convulsions	
Confusion	7	Sinusitis	

Appendix 5: Table of Medication

No is the number of patients the medication was issued to.

Medications used	No	Medications used	No
Co-trimoxazole tabs	59	Ringers Lactate	3
Vit B Co tabs	46	Hydrocortisone acetate cream	3
Codeine/paracetamol tabs	38	Nystatin drops	3
Chlorhexidine mouth wash	31	Chloromycetin tabs [Chlorcol]	3
Ascorbic acid tabs	30	Indomethocin Tablets	2
Folic acid tabs	29	Pen VK tabs	2
Ferrous sulphate tabs	26	Mistmagtricilicate syrup[spasmogel]	2
Fluconazole tabs	24	MST 10mgs	2
Paracetamol tabs	21	Bicillin LA Amp	2
Multivits tabs	20	Bandages	1
Diclofanac tabs	20	Vaginal cream	1
Amoxil tabs	19	Acyclovir 800mgs tabs	1
Aqueous Cream	18	Prochlorperamine tabs [Mitil]	1
Ibibrufen 400mgs tabs	17	Salbutamol syrup	1
Amitryptoline tabs	16	frusamide Amp [lasix]	1
Diclofanac Amp	13	Hyocine Butylbromide Amp [buscopan]	1
Ciprofloxicin	11	Haloperidol Amp [seranace]	1
Morphine syrup 10 mgs/5ml	11		
Morphine Amp	11		
ORS	10		
T.B. drugs	10		
Metoclopramide Tablets	10		
Doxycycline	10		
Pyridoxine tabs	9		
Hydrocortisone acetate, diiodohydroxyquinlione, chlorbutal cream	9		
Metronidazole 400mgs [Flagyl]	9		
Cyclizine tabs [nausine]	9		
Loperamide tabs	9		
Cyclizine Amp	9		
Dressings	6		
Halluperidol tabs	6		
Amphicillin Amp	6		
Acyclovir 200mgs tabs	5		
Erythromycin tabs	5		
Benzyl benzoate	4		
Metoclopramide Amp	4		