3. METHODS

3.1 Study design

This was a descriptive study on routinely collected hospital data.

3.2. Study population

The study population included all patients that were admitted into the four medical wards of Leratong Hospital in 2001 and 2004. An adult patient is defined as a patient that is aged more than thirteen years and is admitted with a medical problem.

3.3. Sampling method

There was no sampling. All patients who were admitted during this period were studied.

3.4. Measurement

Data were obtained from the admission, death and discharge registers for each ward. Data on bed occupancy was obtained from the Data and Information Department of Leratong Hospital. A data collection sheet was designed for collection of data from the ward admission, discharge and HIV test registers. Data was collected on the following variables:

- Age
- Gender
- Race
- HIV status
- Outcome (dead or discharged)
- Length of stay (number of days of admission)

- Discharge diagnosis

3.5. Pilot study

A pilot study was conducted at the hospital prior to the commencement of the study in order to determine the feasibility of using ward registers as a source of data and the extent to which a complete record of all admissions over the period existed. In addition, the validity of ward register data was assessed by randomly sampling 30 entries for 2003, extracting the files of these patients and comparing the data obtained with that contained in patient records. This showed that most of the variables were easily obtainable from the files.

3.6. Possible limitations and validity

The study is limited to the medical wards of Leratong Hospital and the patients who were admitted. Therefore the results may not be generalisable to other wards in the hospital, or other medical wards of other hospitals.

The routine hospital data may not be standardized and some important data may be lacking in the ward registers. Also it may be difficult to ascertain the validity and reliability of some of the information provided by the ward clerks in the ward registers. Discharge diagnosis may not standardized as medical officers and not specialist physicians made most of the diagnoses.

Since many of the patients requiring HIV tests might have refused to undergo the test, the full impact of HIV/AIDS epidemic was not fully captured. HIV-associated diseases were used as proxies for HIV disease burden, but this

might not be very accurate. In HIV patients, the sensitivity of sputum AFB microscopy tests and chest radiography in detecting tuberculosis is usually lower than usual, and the complete burden of disease due to tuberculosis may not be completely appreciated.

The two years were chosen because these were the years when all the information on these variables were available. Ward registers and patients' files before 2001 were not easily located.

3.7. Data analysis

The data were entered using Epinfo 6 Programme statistical package developed by the Center for Disease Control in Atlanta, Georgia. The frequencies, mean, standard deviations, and 95% confidence intervals was calculated for each item in the data set. The data was also imported into Stata package for stratified analyses, t-tests and chi-square tests to assess possible confounding effects due to some variables such as such as age, sex, race, HIV status and discharge diagnosis.

3.8. Ethical considerations

The names of the patient were not mentioned in the study. Pooled summary data from the wards were used. On the data collection sheet each patient was allocated a specific serial number which had no link to his/her name or hospital number. Strict procedures of confidentiality and anonymity were

observed. The author was the only person involved in the collection of and access to data.

Permission and approval was obtained from the management of Leratong Hospital and Gauteng Department of Health before the study was started. The protocol was reviewed and approved by the Ethics Committee of the University of the Witwatersrand (Number: R14/49).

3.9. Definitions:

1. Chronic diseases of lifestyle: diabetes mellitus, hypertension, heart failures,

2. Crowding out: when patients with non-HIV associated diseases which could benefit from admission are not admitted because of unavailability of beds due to the increased HIV burden.

3. Discharge diagnosis: the final diagnosis recorded on the patients file or discharge summary when the patient is discharged.

4. HIV-associated diseases: tuberculosis, pneumonia, gastroenteritis, and meningitis.

5. Medical problem: diseases for which a patient is admitted into a medical ward.