# Pattern of medical admissions in a tertiary health centre in Makurdi, north central Nigeria: A one year review

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**Abstract**

**Background**: The patterns of admissions into medical wards differ widely. This difference is dependent on the prevalent medical conditions in such regions of the world. This study determined the pattern of medical admissions in a tertiary health centre in Makurdi, North Central Nigeria and compared it with observations from other parts of the country.

**Methods**: Admission and discharge registers of the medical wards of Federal Medical Centre, Makurdi from January 2013 to December 2013 were reviewed and relevant data extracted and analyzed.

**Results**: The patients admitted into medical ward during the period numbered 840, made up of 342 (40.7%) females and 498 (59.3%) males with a ratio of 1:1.46. The age range of the patients was 18 to 100 years with mean age of 43±16 years (females 41±14 vs. males 44±17 years). Eighty seven percent (732) of patients admitted were between the ages 20 – 69 years. Non-communicable diseases accounted for 465 (55.4%) of the cases while communicable diseases constituted 375 (44.6% ) .While Congestive cardiac failure was the most common non communicable disease (9.1%), HIV/AIDS was the most prevalent infection, constituting 40.0% of communicable diseases in the sampled population.

**Conclusion**: The study noted a dual burden of both communicable and non communicable diseases and preventive measures of these diseases should be instituted and or intensified.

**Keywords:** Admissions, Communicable disease, Medical, Non-communicable disease

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## Introduction

Worldwide, the pattern of admissions into medical wards differ widely[1]. This difference is dependent on the prevalent medical conditions in such regions of the world. There is a global trend towards an increase in non-communicable diseases[2]. It is believed that a disproportionate burden of this increase in non-communicable diseases will be borne by developing countries[2]. This trend has already been observed by some researchers from South East Nigeria[1,3,4]. However, communicable diseases still account for most of the morbidity and mortality in Africa[5]. In this paper, we present the report of a retrospective study aimed at describing the pattern of hospital admissions into a tertiary hospital in Nigeria.

## Materials and Methods

This was a retrospective descriptive hospital based study of patients in the medical wards of Federal Medical Centre, Makurdi North-Central Nigeria over a one year period (January 2013 to December 2013). The case files of the patients were retrieved from the records department of the hospital and relevant data extracted (age, sex, month of admission, diagnosis and outcome). Analysis of data was done using Epi Info version 2.3. The qualitative data were expressed as frequencies and percentages while the quantitative data were expressed as mean and standard deviation. Proportions were compared using the Chi-Squared test. P value less than 0.05 was regarded as statistically significant.

## Results

### *Characteristics of study subjects*

Within the study period, a total of 6,653 patients were admitted into the various wards of Federal Medical Centre, Makurdi. Out of this number, 840 (12.6%of annual total admissions) were admitted specifically into the medical wards of the institution. There were 342 (40.7%) females and 498 (59.3%) males with a ratio of 1:1.46. The age range of the patients was 18 to 100 years with mean age of 42.7±15.98 years (female 40.98±13.93, male 43.87±17.19 years). Eighty seven percent (732) of patients admitted were between the ages 20 – 69 years. The age group 40 -49 years were the most inpatient in medical wards (22.2%) followed closely by patients 30 – 39 years old (21.8%). Other details about age are as presented in Figure 1.Four hundred and fifty four (54%) of admitted patients were farmers, two hundred and seventy seven (33%) civil servants, sixty

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seven (8%) were self employed/ business men and women and the rest made up of students, artisans, retirees and the unemployed.

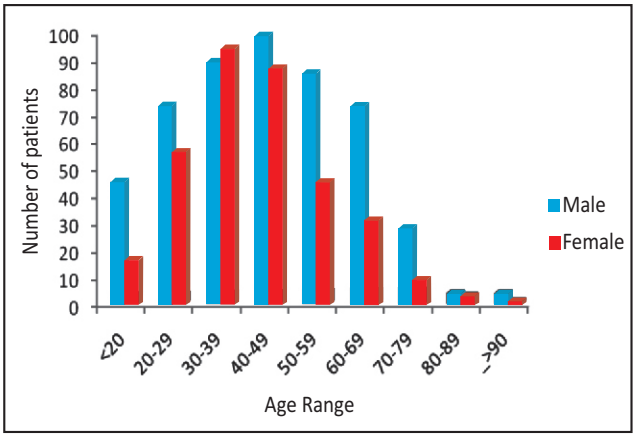



Figure 1: Age and sex distribution of patients admitted into the medical wards of the Federal Medical centre Makurdi

Table 1. Gender distribution of communicable and non-communicable diseases at the medical wards of the Federal Medical Centre, Makurdi

| Diagnosis | Total, n (%) | Male, n (%) | Female, n (%) | P value |
|---|---|---|---|---|
| Acute hepatitis | 14(1.67) | 12(1.43) | 2(0.24) | 0.04 |
| Enteric fever | 30(3.57) | 13(1.55) | 17(2.0) | 0.24 |
| Gastroenteritis | 37(4.4) | 26(3.09) | 11(1.3) | 0.08 |
| HIV/AIDS | 148(17.6) | 80(9.5) | 68(8.1) | 0.77 |
| Malaria | 49(5.8) | 27(3.2) | 22(2.6) | 0.91 |
| Meningitis | 19(2.3) | 13(1.6) | 6(0.71) | 0.35 |
| Pneumonia | 17(2.0) | 13(1.6) | 4(0.48) | 0.12 |
| PUD | 52(6.2) | 16(1.9) | 36(4.3) | 0.0002 |
| TB | 42(5.0) | 27(3.2) | 15(1.8) | 0.28 |
| UTI | 11(1.3) | 5(0.59) | 6(0.7) | 0.36 |
| Bronchial Asthma | 5(0.59) | 1(0.12) | 4(0.47) | 0.06 |
| CCF | 76(9.06) | 40(4.76) | 36(4.3) | 0.04 |
| CKD | 15(1.8) | 13(1.55) | 2(0.24) | 0.10 |
| CLD | 65(7.74) | 50(5.95) | 15(1.8) | <0.01 |
| COPD | 5(0.59) | 4(0.48) | 1(0.12) | 0.40 |
| DM | 75(8.93) | 52(6.19) | 23(2.74) | 0.27 |
| Severe hypertension | 37(4.41) | 19(2.26) | 18(2.14) | 0.17 |
| Stroke | 63(7.50) | 46(5.48) | 17(1.67) | 0.10 |
| VOC | 38(4.52) | 28(3.33) | 10(1.19) | 0.22 |
| Rheumatoid arthritis | 42(0.05) | 13(1.55) | 29(3.45) | 0.0001 |

HIV/AIDS (Human immune deficiency virus/acquired immune deficiency disease), PUD (Peptic ulcer disease), TB (Tuberculosis), UTI (Urinary tract infection), CCF (Congestive cardiac failure), CKD (Chronic kidney disease), CLD (Chronic liver disease),ESRD (End stage renal disease), COPD (chronic obstructive pulmonary disease), DM (Diabetes Mellitus), VOC (Vaso-oclusive crises)

***Medical Conditions***

Communicable diseases constituted 44.6% of admissions while non-communicable diseases made up 55.4%. HIV/AIDS was by far the most prevalent infection, constituting 40.0% of communicable diseases in the sampled population. All 42 patients admitted for tuberculosis were HIV positive. Among the non-communicable, congestive cardiac failure accounted for the major illness (9.1%) closely followed by type II DM (8.9%). Other details about gender and diagnosis are as presented in Table 1.

Table 2: Pattern of admission based on medical Specialties at the Federal Medical Centre, Makurdi

| Medical Specialty | Total n, (%) | Male n, (%) | Female, n (%) | P value |
|---|---|---|---|---|
| Infectious diseases | 212(25.2) | 121(14.4) | 91(10.8) | 0.5 |
| Cardiology | 110(13.1) | 57 (6.8) | 53(6.3) | 0.11 |
| Neurology | 82(9.7) | 59(7.0) | 23(2.7) | 0.02 |
| Gastroenterology/ Hepatology | 198(23.5) | 117(13.9) | 81(9.6) | 0.98 |
| Endocrinology | 75(8.9) | 52(6.2) | 23(2.7) | 0.08 |
| Nephrology | 26(3.1) | 18(2.1) | 8(1.0) | 0.40 |
| Pulmonology | 57(6.8) | 33(3.9) | 24(2.9) | 0.93 |
| Haematology | 38(4.5) | 28(3.3) | 10(1.2) | 0.09 |
| Rheumatology | 42(5.0) | 13(1.5) | 29(3.5) | <0.01 |

When the diseases were grouped into medical specialties, infectious diseases (25.2%) were the most prevalent, followed closely by Gastroenterological/ Hepatic diseases (23.5%). Other details about pattern of admission based on specialty are as presented in Table 2.A temporal evaluation revealed more admissions during the dry season of October to March (464 patients;55.24%) against 376 (44.76%) patients admitted during the wet season of April to September. The breakdown is shown in Figure 2.

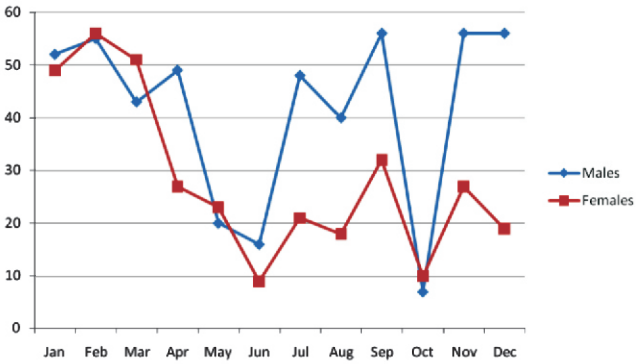
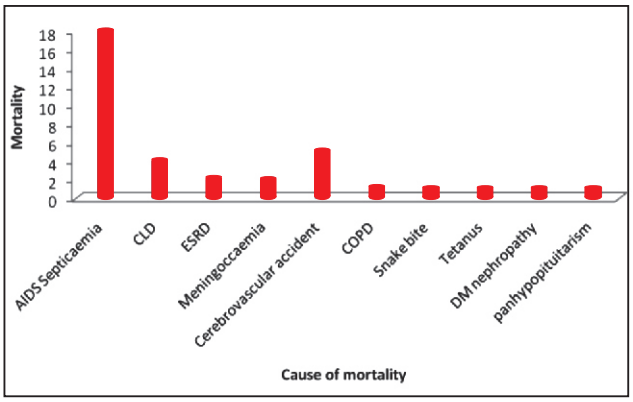



Figure 2: Temporal pattern of admissions into internal medicine services of the Federal Medical Centre, Makurdi in 2013.

***Outcomes***

Out of the 840 patients admitted over the study period, 790 (94.1%), were discharged, 36(4.3%) died and 14(1.7%) left admission against medical advice (i.e. without being discharged). The commonest cause of death was septicaemia in patients with acquired immune deficiency syndrome (AIDS). Other details about outcome are presented in Figure 3.




Abbreviations: CLD (Chronic liver disease),ESRD (End stage renal disease), AIDS (acquired immune deficiency disease), COPD (chronic obstructive pulmonary disease).

Figure 3: Causes of mortality in patients admitted into medical wards of Federal Medical Centre in 2013

## Discussion

This study described the pattern of medical admissions in a tertiary health care facility in North Central Nigeria. More males (59.3%) were admitted during the study period than females (40.7%). This observation is similar to other hospital based studies from southern Nigeria [1,3,4,6] and other parts of Africa[7].This may also be due to a perceived gender inequality in which men are thought to be more empowered, giving them more access to health care delivery than women[1].

More than eighty seven percent of admitted patients were within the age range 20 – 69 years with the most prevalent age range on admission being 40 -49 years old. This is of economic significance in any country as this age range represents a segment of trained and experienced workforce – a real economic danger. This age range was similar to that observed by Ike et al[4] in 2008.

Non communicable diseases made up 55.4% of the diseases attended to in medical wards within the study time frame. This is in agreement with the recent upward trend of increasing burden of non communicable diseases in developing countries all over the world[8]. Research findings from Nigeria have also demonstrated this trend[1, 3, 4].Congestive Cardiac Failure was the commonest non communicable disease in this research, constituting 16.81% of all non communicable disease cases managed. This is in consonance with findings from other researches where congestive heart failure was ranked among the top 3 common illnesses necessitating admission into medical wards[1, 3]. Type II Diabetes mellitus was the second most prevalent non communicable disease in this series, constituting 15.59% of all patients in this group. Diabetes was also among the 3 most prevalent non communicable diseases in other series[1,3].

Communicable diseases account for 44.6% of all admissions during the study year. HIV/AIDS was the most prevalent illness, accounting for 40% of all communicable diseases. Benue state has had the consistently unenviable position as the state with the highest prevalence of HIV/AIDS, currently at 12.7% of sampled population[8]. Other studies also recognised the eminent position of HIV/AIDS in the reasons for admitting patients into medical wards[1, 3], although with much less inclusion. Tuberculosis was the second most prevalent communicable disease in this study, constituting 11.21% of all the disorders in this group. Every patient who had tuberculosis on admission in the medical wards for the period under study was HIV positive. Tuberculosis was a leading communicable disease in studies from other parts of Nigeria[1, 3]. HIV has helped in no small way to the resurgence of Tuberculosis[1,10].

Infectious diseases were the commonest reasons (25.2%) for admissions in this study. This is in keeping with other studies from Nigeria[1, 11].The burden of infectious diseases remains high in this environment[1, 5]fuelled by seasonal exacerbations (meningitis), rampant social upheaval (e.g. gastroenteritis) and poverty (e.g. HIV). Gastroenterological/ Hepatic diseases were the next commonest reason for admission. They are very common indications for admission in other studies[1, 3, 11], comprising mostly of gastroenteritis and various forms of chronic liver diseases.

Females had statistically significant higher predilection for rheumatoid disorders compared to males. This is explained by their higher affinity for immune mediated diseases[10]. The observation that statistically significant number of males had neurological diseases compared to females had already been documented by Okunolaet al[6]. Also, the male gender is a known risk factor for stroke[12]. These may account for the higher number of males with cerebrovascular disease compared to females in this study.

Up to 94% (790) of the patients improved and were discharged. Fourteen patients (1.6% of admitted patients) signed against medical advice, leaving the wards before they could be discharged. However, 36 (4.3%) of the total admissions into the medical wards for the period under review died. The commonest cause of death was overwhelming sepsis in patients with acquired immune deficiency syndrome, AIDS (44.4% of deaths).

In conclusion, a double burden of high prevalence of both communicable and non-communicable diseases existing in patients in their prime years in a resource poor country will further stress an already strained health delivery system and portend grave danger to the economy. The most prevalent diseases observed (heart failure and HIV/AIDS) in this study are of public health importance and preventable by targeted education. Where they are lacking, they should be instituted and their scope expanded where they exist.

***Conflict of Interest***

None declared in this work.

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