

# MALAWI Health Information Bulletin

## Performance Data Analysis of Tertiary Care Facilities

Special issue: 2002 calendar year and 2002-2003 fiscal year

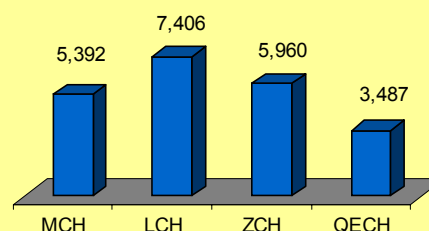
Currently four hospitals are providing tertiary care services to the patients referred from districts and other hospitals in the country. Altogether 2,089 beds are operational in 4 central hospitals ranging the tertiary care bed population ratio from 3,500 to 7,400.

Table 1: Distribution of tertiary care beds and providers, Malawi 2003

CH	Catchment population	No. of beds	Doctors	Nurse	Clinical Officer	Tech	Admin personnel
MCH	1,412,659	262	10	89	18	19	51
LCH	4,613,958	623	32	256	55	40	66
ZCH	1,978,831	332	4	112	26	24	27
QECH	3,040,337	872	13	265	22	19	72
Total	11,045,785	2089	59	722	121	102	216

Total population in the districts of respective central hospital catchment area, number of standard operational beds, number of doctors, nurses, clinical officers, technicians and admin personnel by central hospital is shown in table 1. Figure 1 shows ratio of beds to the catchment population of each central hospital.

Figure 1: Ratio of tertiary care beds to the population, Malawi central hospital, 2003



## Outpatient services

The four central hospitals attended to 468,047 outpatient visits in 2002 and 484,220 in 2002-2003.

OPD coverage as percentage of catchment population has remained more or less the same both for calendar and fiscal year.

Table 2: OPD attendance, Malawi central hospital, 2002 & 2002-2003

CH	2002 Calendar year		2002-2003 Fiscal year		Average OPD visits per month	Average OPD visits per day*
	OPD visits	as % of catchment population	OPD visits	as % of catchment population		
MCH	56,068	4%	60,155	4%	6,457	307
LCH	148,808	3%	152,125	3%	16,719	796
ZCH	102,925	5%	83,626	4%	10,364	494
QECH	160,246	5%	188,314	6%	19,364	922
Total	468,047	4%	484,220	4%	52,904	2,519

\* Average 21 working days per month

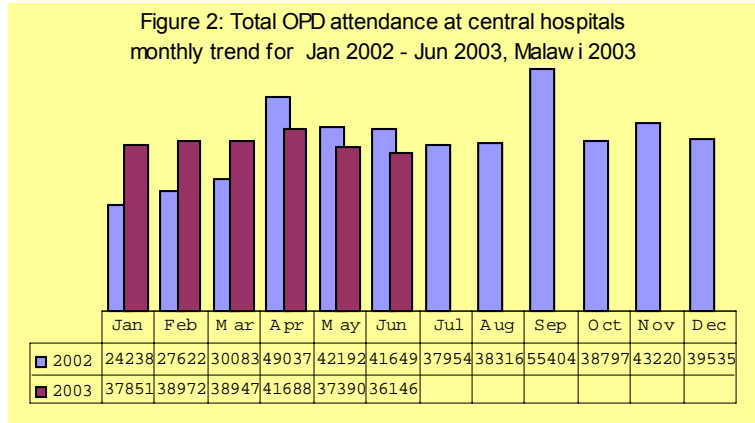
OPD coverage in 2002-2003 ranges from 3% in LCH to 6% in QECH.

Average monthly OPD visit at central hospitals is 53,000 ranging from 6,457 in MCH to 19,384 in QECH. Daily outpatient load varies from 307 patients in MCH to 922 patients in QECH. Refer to table 2 for exact details. The caseload varies from month to month and year to year.

Figure 2 shows that the highest numbers of cases were seen in September followed by April.

The cases seen in January, February and March 2002 were unreasonably low partly due to the fact that the system of proper recording of OPD data started from January only. The cases shown

for the first three months of 2003 provide more realistic view than the first three months in 2002



## Inpatient Services

Table 1 and figure 1 in page 1 show the ratios of tertiary care bed capacity to the catchment population. On average, one bed covers 5,288 population for tertiary level referral inpatient services, ranging from 3,487 at QECH to 7,406 at LCH. Figure 3 shows absolute number of patients admitted at four different central hospitals in 2002 and 2002-2003

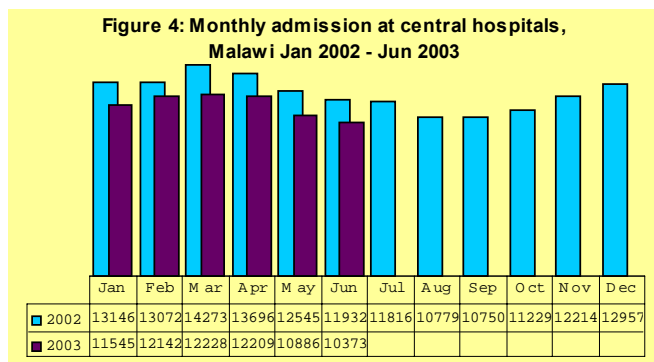
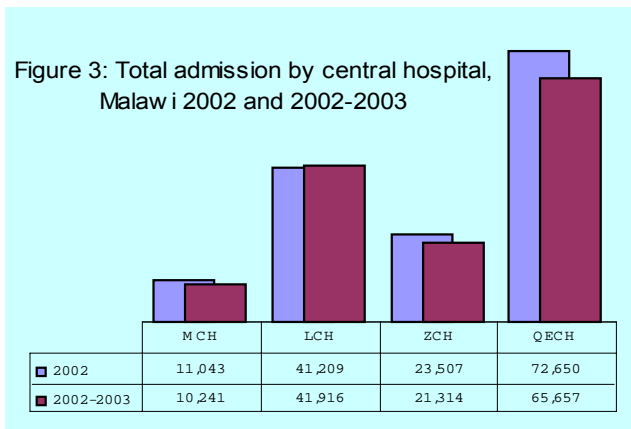


Figure 4 shows total patient admitted at central hospitals in each month from January 2002 to June 2003. It has been noted that the number of admissions varies from month to month and year to year.

In 2002, more patients were admitted in March followed by preceding and following month.

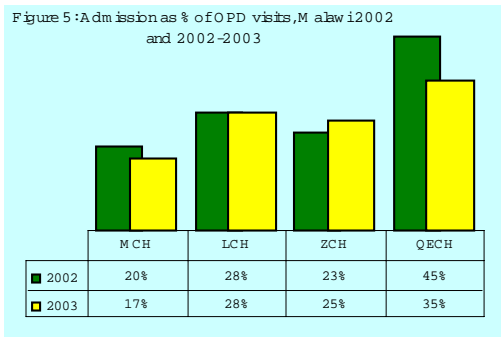
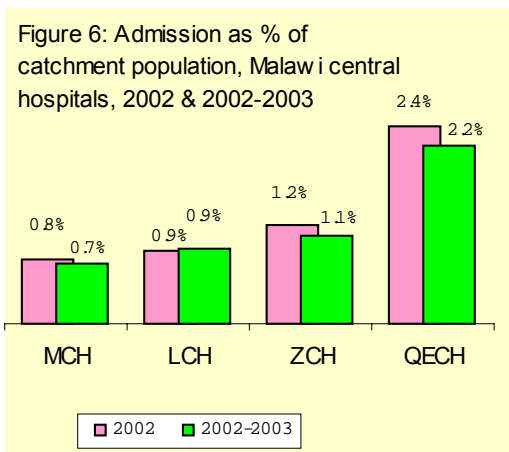


Figure 5 shows the comparison between outpatient and admission by central hospital for 2002 and 2002-2003. Admission as percentage of OPD cases is lowest in MCH and highest in QECH.

Figure 6 shows admission as percentage of catchment population of respective central



hospital both for fiscal and calendar year.

Admission as percentage of catchment population is lowest in MCH and highest in QECH.

Figure 7 shows the bed occupancy rate for 2002 and 2002-2003. The average occupancy rate is 80% for both 2002 and 2002-2003, ranging from 64 to 99%. This is lowest in QECH and highest in ZCH.

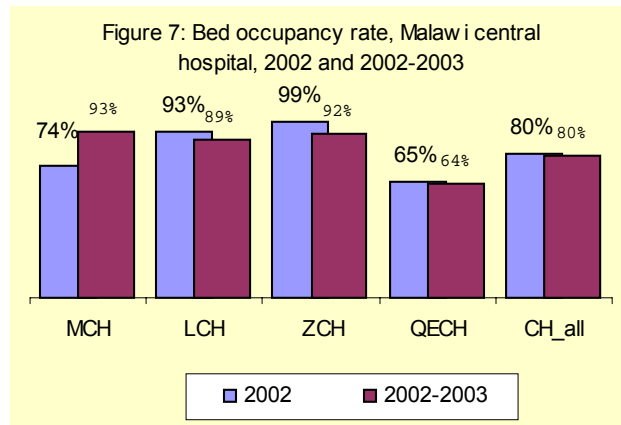
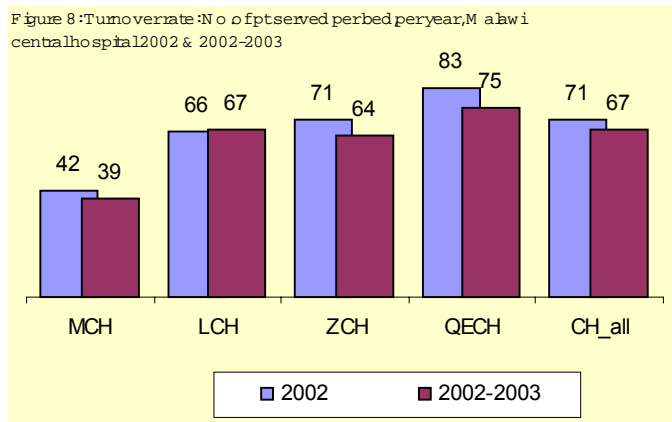


Figure 9 shows average number of days that a patient spent in a hospital bed. ALOS in 2002 was 4.1 days and in 2002-2003 was 4.4



days ranging from 2.9 days to 8.7 days.

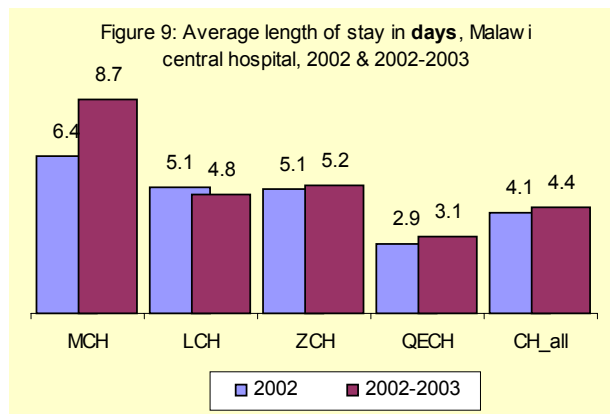


Figure 8 shows the bed turnover rate of 71 for 2002 and 67 for 2002-2003 ranging from 39 to 83 persons/bed/year.

## New cases

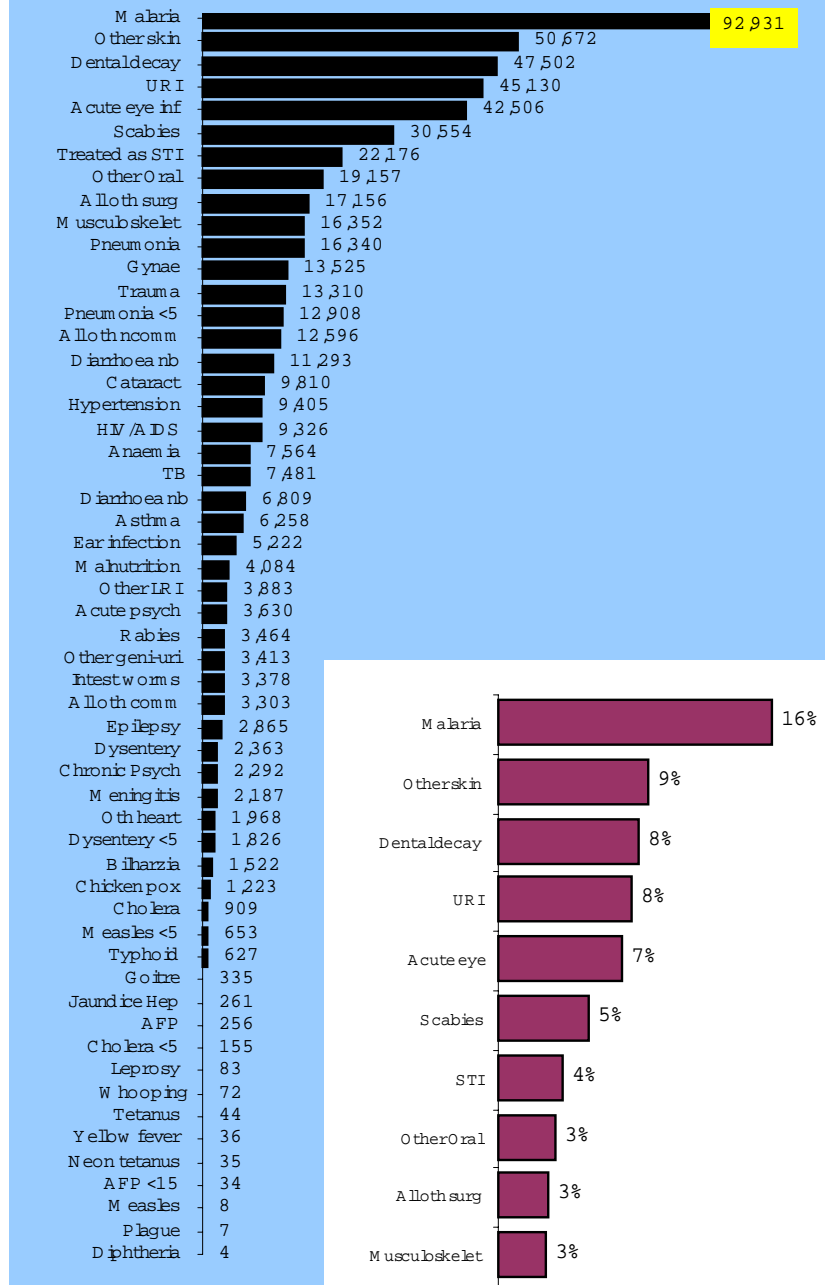
New cases seen at central hospitals during Jan 2002- Jun 2003 period has been presented in figure 10.

Out of 570,903 new cases seen at different central hospitals, malaria accounted for 92,931 (16%) followed by skin other than scabies 50,672 (8%), and dental decay 47,502 (8%).

The first 15 diseases category consists 80% of total new cases whereas the last 20 diseases category consists only 1% of total cases.

The diseases like malaria, skin infections, eye infections, scabies, STI, pneumonia, diarrhoea would have been effectively treated at primary care facilities and if not at secondary care facilities. Influx of such primary cases at tertiary care facilities not only depletes the resources allocated to tertiary care but also affects the quality of tertiary care.

**Figure 10 : New cases in descending order  
Malawi central hospitals, Jan 2002 - Jul 2003**



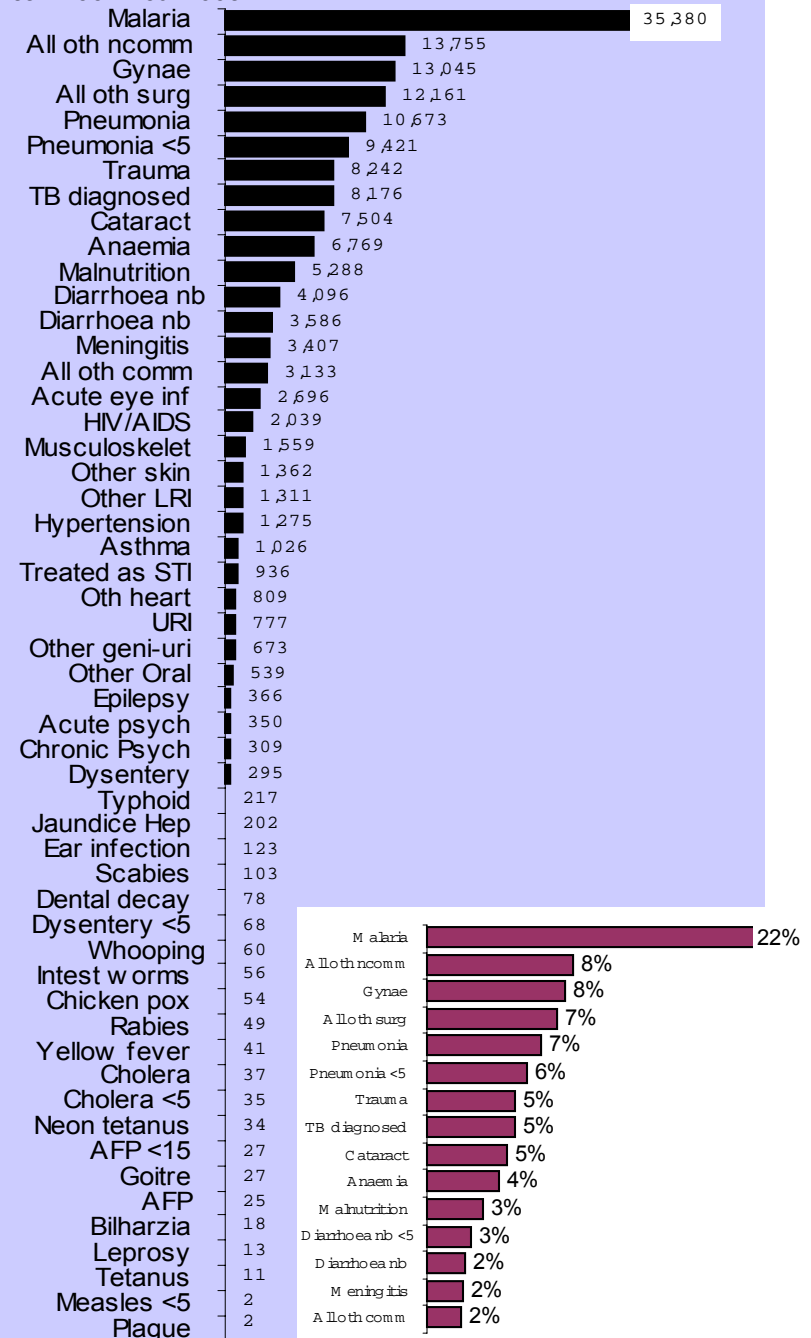
## Inpatient surveillance

Out of 570,903 new cases seen at central hospitals, 162,240 (28%) were treated in beds.

Among the cases that required inpatient care, 22% were finally diagnosed as malaria, 8% as gynaecological disorder, 13% as pneumonia, 5% as diarrhoea, 5% as TB, 5% as trauma, 5% as cataract, 4% as anaemia, 3% as malnutrition so on and so forth.

Refer to figure 11 for further details.

Figure 11: Inpatient in descending order as diagnosed at discharge, Malawi central hospitals, Jan 2002 - Jul 2003



## Hospital Deaths

Out of total 162, 240 cases admitted in central hospitals over 18 months period, 14,486 (9%) cases died at discharge.

Most deaths occurred from preventable diseases.

Malaria accounted for highest number of death toll followed by pneumonia, TB, anaemia and malnutrition.

Figure 12 shows the magnitude of problem in descending order.

Figure 13 shows comparison of absolute number of deaths between central hospitals in 2002 and 2002-2003.

Figure 14 shows monthly trends over 18 months and 15 shows deaths as % of inpatient by central hospital for 2002 and 2002-2003.

Figure 12: Hospital Deaths in descending order, Malawi central hospitals, Jan 2002 - Jul 2003

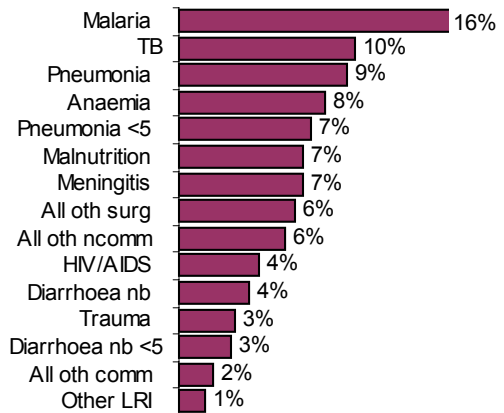
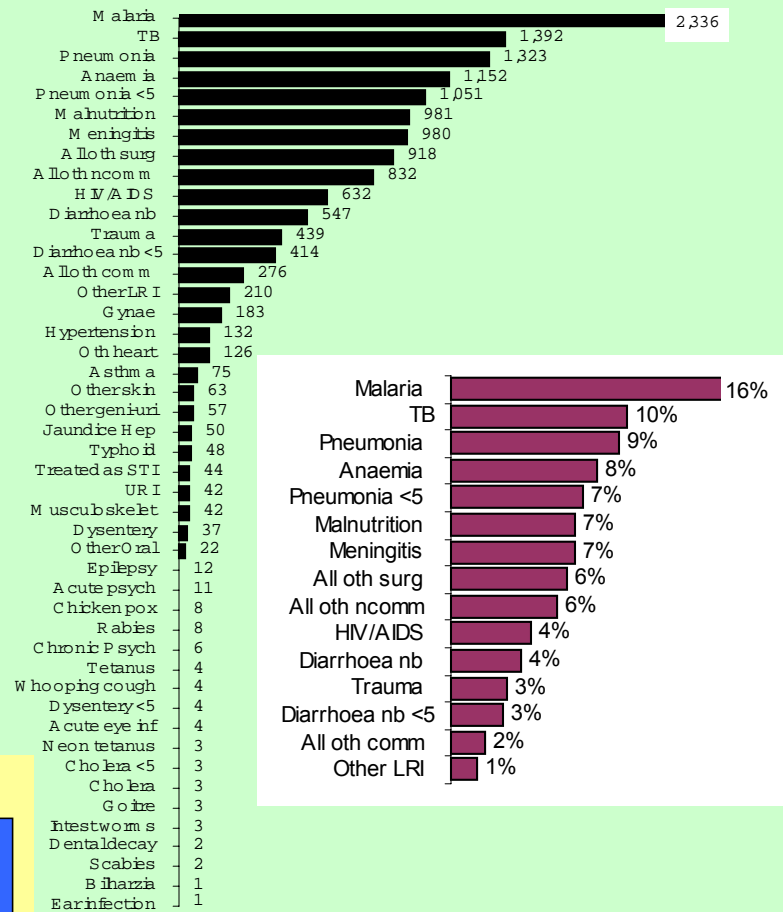


Figure 13: Death in Central hospitals, Malawi 2002 and 2002-2003

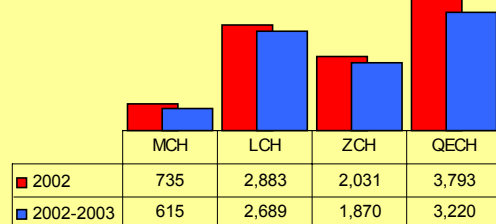


Figure 14: Inpatient death by month, Malawi central hospitals, Jan 2002 - Jun 2003

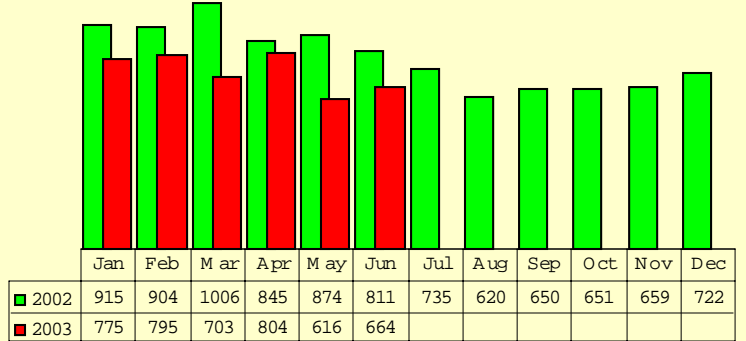
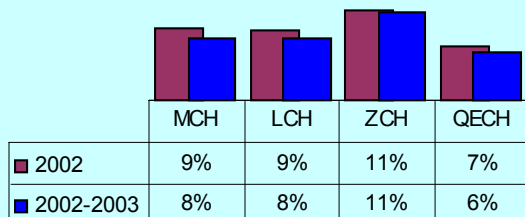


Figure 15: % of inpatient discharged dead, Malawi central hospitals, 2002 and 2002-2003



## Obstetric complications and deaths

Table 3, figure 16, 17, and 18 provide information on obstetric complications cases and direct obstetric deaths recorded in 4 central hospitals over 18 months period and.

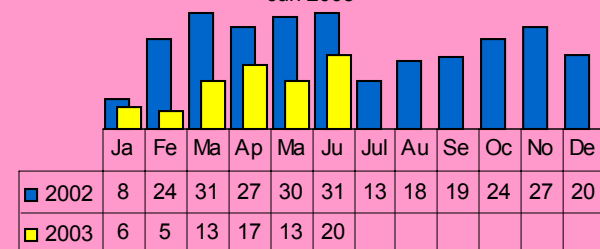
Average direct obstetric death for all CH is 3 percent. The worst rate (24%) is reported from MZC and the lowest rate (1%) from QECH.

The number of obstetric deaths in Mzuzu central hospital is unreasonably high. Lilongwe central hospital also has very high direct obstetric death rate compared to QECH and ZCH.

Month to month and year to year variation of the reported cases and resulting deaths are shown in figure 16 and 17.

On average, 542 women have been received at 4 central hospitals in each month with obstetric complications

Figure 17: Direct Obstetric death, Malawi Jan 2002 - Jun 2003



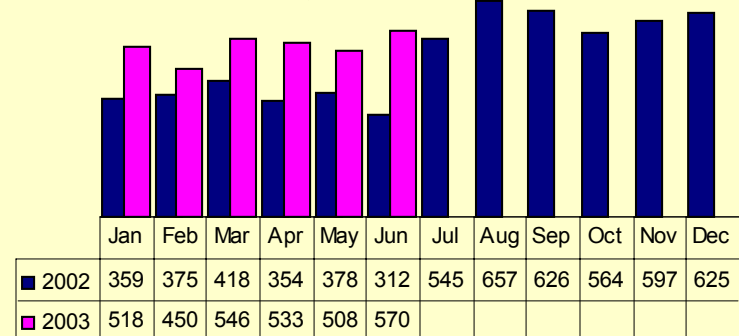
presumably that required advanced level of care. The number of cases vary from month to month and year to year. The number of cases during the first six months of 2002 were relatively low compared to remaining 12 months with an exception in January 2002. Refer to figure 16 for further details.

Table 3: Direct obstetric death at central hospital, Malawi Jan 2002 - June 2003

CH	Cases	Deaths	% of death
MCH	595	140	24%
LCH	918	72	8%
ZCH	1055	26	2%
QECH	6367	108	2%
CH_all	13441	346	3%

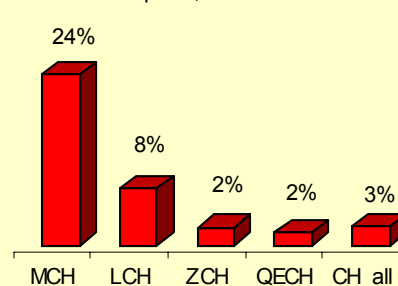
Every month, on average, 24 women died

Figure 16: Direct Obstetric complications seen at hospital, Malawi, Jan 2002 - Jun 2003



due to obstetric complications in 4 central hospitals. The monthly variation with unexplained reason can be seen in figure 17.

Figure 18: Direct obstetric death rate, Malawi central hospitals, 2002 Jan - 2003 June



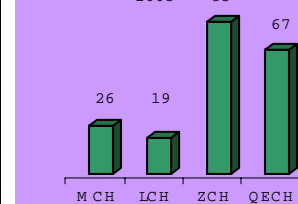
## Human resource and workload distribution

Human resource distribution to four central hospitals, work load in terms of beds to be covered and resultant outputs in terms OPD visits, inpatients and inpatient days can be seen in table 4 and figures 19 to 25.

Table 4: Comparison of human resource against service outputs, Malawi central hospitals, June 2003

CH	Doctors	Nurse	CO	Tech	Admin	Beds	OPD 2002-2003	Inpatient 2002-2003	inpatient days 2002-2003
MCH	10	89	18	19	51	262	60,155	10,241	71,081
LCH	32	256	55	40	66	623	152,125	41,916	212,148
ZCH	4	112	26	24	27	332	83,626	21,314	120,052
QECH	13	265	22	19	72	872	188,314	65,657	208,224

Figure 19: Number of beds per doctor, Malawi central hospitals, June 2003



The number of beds per doctor and per nurse in LCH is 19 and 2.4 respectively whereas a doctor covers 83 beds in ZCH and 67 in QECH and a nurse covers 3.3 beds in QECH and 3 in ZCH.

Figure 20: Number of beds per nurse, Malawi central hospitals, June 2003

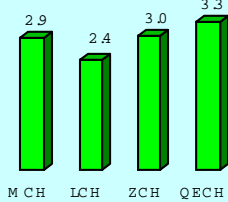


Figure 21: Inpatient per doctor per year, Malawi CH, 2002-2003

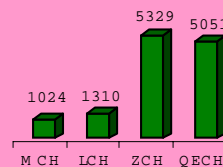
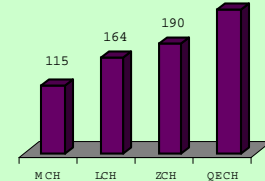


Figure 22: Inpatient per nurse per year, Malawi CH, June 2003



Refer to figures 19-25 for variations in workload and doctor nurse service output ratio.

Figure 23: Inpatient days per doctor per year, Malawi CH 2002-2003

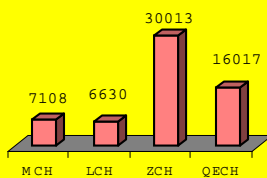


Figure 24: Inpatient days per nurse per year, Malawi CH, 2002-2003

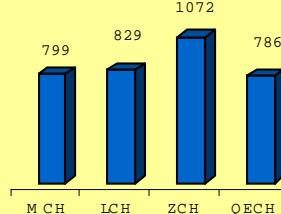
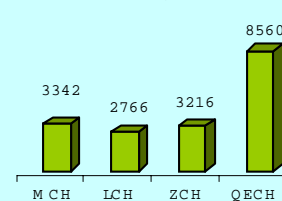


Figure 25: Outpatients per CO per year, Malawi CH, 2002-2003



*This special bulletin has been produced by Ministry of Health and Population, Planning Department, Health Management Information Unit Box 30377, Lilongwe, Malawi. Monthly data by health facility, district and central hospital can be accessed at [www.health.mw](http://www.health.mw)*

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