

CHAPTER IV

RESULTS

This descriptive retrospective study aimed to analyze expenditure, trend, outcomes and effectiveness of referred care to India for a period of five financial years commencing from July 1999 to June 2004. There were no data available for capital investments and there were also no records of fixed assets' depreciation during the five years. Therefore, available retrospective data of operating expenditure for five years were collected only from the Jigme Dorji Wangchuck National Referral Hospital and several discussions undertaken with senior physicians who assisted in defining and categorizing treatment outcomes. Similarly three trained persons were employed to collect data from medical records and financial reports.

4.1 Patients Fiscal Years 1999-2004

It must be made clarified that in Bhutan persons 18 years and below are considered and defined children by the Ministry of Home Affairs and are taken care by parents. However, in medical care persons 12 years and below are considered children and for care referred to pediatrics. Therefore in this study all cases up to or below 18 years were considered children whether referred to pediatrics or any other medical specialty. Lack of detailed data did not allow further analysis of cases within pediatrics. Figure 4.1: shows that more of males were referred for care outside than females throughout the study period. Although there was an increasing trend for both male and

female patients, the increasing trend for females was more steady than for men, who showed more sharp increase during 2001 to 2003. The detailed data are presented in Tables.

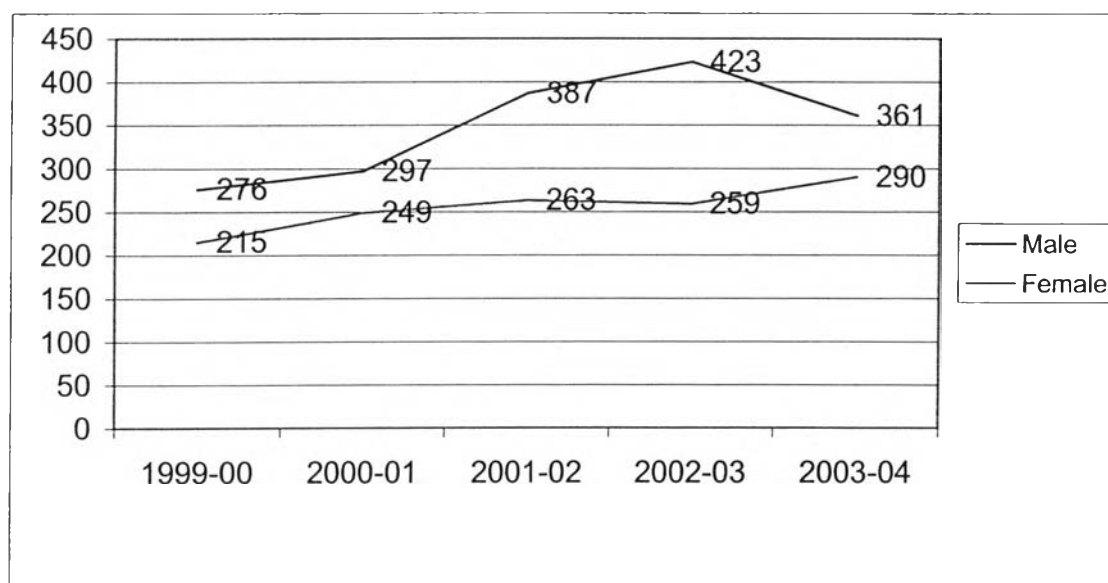


Figure 4.1: Distribution of Referrals to India by Genders and Fiscal Years

Figure 4.2: shows that there were a relative stable number of child referrals (both male and female), while referral for adult females showed a gradual increase over the years. However, the number of adult males availing care in India showed a sharp increase from 2001 onwards until 2003 and dropped again in 2003-2004. The overall number of referrals throughout the study period mirrors the pattern of male referrals.

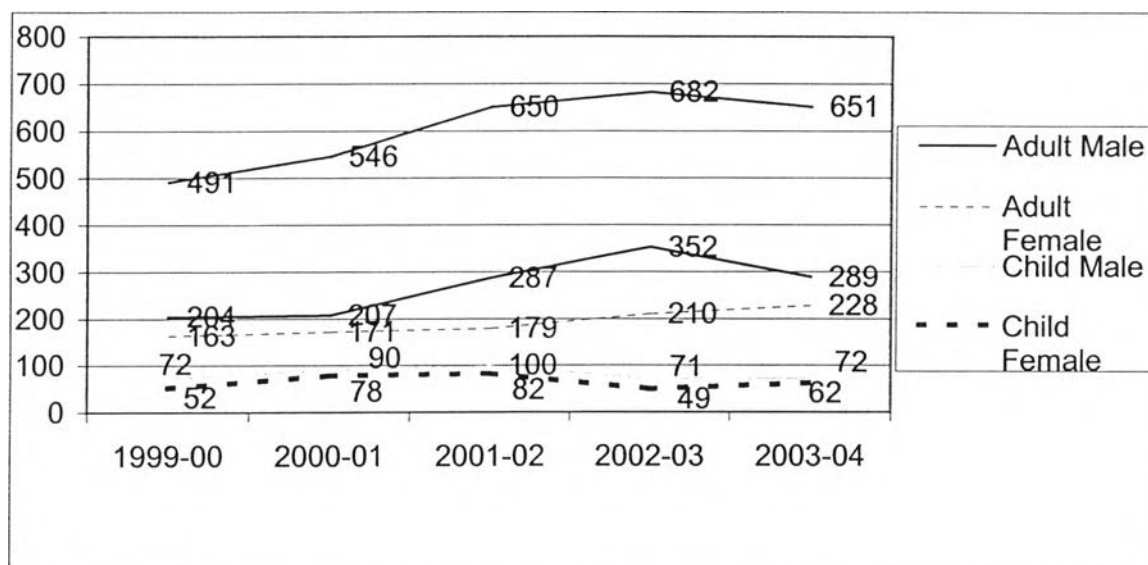


Figure 4.2: Distribution of Patients by Adults, Children, Genders and Fiscal years

Table 4.1 shows that 491 patients were referred during 1999-2000. There were 79 (56.8%) adult males, 60 (43.8%) adult females, 36 (51.4%) male children and 34 (48.6%) female children at Vellore. Kolkata had 93 (51.5%) males, 87 (48.3%) females, 17 (77.2%) male children and 5 (22.9%) female children. Similarly Gauhati received 28 (66.7%) males, 14 (33.3%) females, 19 (59.4%) male children and 13 (40.6%) female children and Delhi had 4 (66.7% males, 2 (33.3%) females. In total there were 276 males and 215 females. Large centers like Vellore and Kalkota had 115 (55.1%) males and 94 (44.9%) females, 110 (54.5%) males and 92 (45.5%) females.

Table 4.2 shows that during fiscal year 2000-2001, 546 patients were referred for care to India. In total Vellore received 132 (53.8%) males, 113 (46.1%) females, 41 (45.5%) male children and 36 (46.1%) female children. Similarly Kolkata had 126 (54.3%) males, 106 (45.7%) females. Generally more males were referred than females

during the period. Large centers like Vellore and Kalkota seem to have equal distribution of patients during the period. The referral to Gauhati and Delhi remained insignificant to comment on ratios of males and females.

Table 4.3 reveals that 650 patients were referred for care outside during 2001-2002. A total of 387 males and 263 females out of which 166 were males (58.6%) and 117 (41.4%) females at Vellore. Kalkota had 196 (59.7%) males to 132 (40.2%) females. There were more males than females in both age groups. There also appeared a slight shift in total number of patients at Kalkota as it had 328 patients compared to Vellore that received 283. There was no significant change in terms of number of patients availing facilities at Gauhati and Delhi.

Table 4.4 shows that 682 patients were referred during 2002-2003 in four centers with 423 male and 259 females. There were 167 (66.7%) males and 85 (33.3%) females at Vellore. Kalkota had 229 (59.5%) males to 156 (40.4%) females. There also appears a large shift in total number of patients referred at Kalkota. Kalkota had 325 patients compared to Vellore 252. There was no significant change in terms of number of patients availing facilities at Gauhati and Delhi. The ratio of males remained higher than females. The fiscal year also saw more patients being referred than the previous year.

Table 4.5 shows that 651 patients were referred for care outside during 2003-2004. In total there were 361 male and 290 females. There were 104 males (56.2%) and 81 (43.7%) females at Vellore. Similarly Kalkota had 241 (54.5%) males to 201

(45.5%) females. There also appeared a major shift in total number of patients being referred at Kalkota. Kalkota had 442 patients compared to Vellore 185. There was no significant change in terms of number of patients availing facilities at Gauhati and Delhi. The ratio of males in all centers remained higher than females. Centers like Gauhati and Delhi had a very few number of patients to make any comparison.

Table 4.1: Distribution of Referrals by Centers for the Fiscal Year 1999-2000

| Center | Adult | | | | Children ≤ 18years | | | | | | Total | | | | | | | |
|--------------|------------|------|------------|------|--------------------|------------|-----------|------|-----------|------|------------|------------|------------|------|------------|------|------------|------------|
| | Male | | Female | | Total | | Male | | Female | | Total | | Male | | Female | | Total | |
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| Vellore | 79 | 56.8 | 60 | 43.1 | 139 | 100 | 36 | 51.4 | 34 | 48.5 | 70 | 100 | 115 | 55.1 | 94 | 44.9 | 209 | 100 |
| Kalkota | 93 | 51.6 | 87 | 48.3 | 180 | 100 | 17 | 77.2 | 5 | 22.9 | 22 | 100 | 110 | 54.4 | 92 | 47.5 | 202 | 100 |
| Gauhati | 28 | 66.7 | 14 | 33.3 | 42 | 100 | 19 | 59.3 | 13 | 40.6 | 32 | 100 | 47 | 63.5 | 27 | 36.4 | 74 | 100 |
| Delhi | 4 | 66.7 | 2 | 33.3 | 6 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 66.7 | 2 | 33.3 | 6 | 100 |
| Total | 204 | | 163 | | 367 | 100 | 72 | | 52 | | 124 | 100 | 276 | | 215 | | 491 | 100 |

Table 4.2: Distribution of Referrals by Centers for the Fiscal Year 2000-2001

| Center | Adult | | | | Children ≤ 18 years | | | | | | Total | | | | | | | |
|--------------|------------|------|------------|------|---------------------|------------|-----------|------|-----------|------|------------|------------|------------|------|------------|------|------------|------------|
| | Male | | Female | | Total | | Male | | Female | | Total | | Male | | Female | | Total | |
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| Vellore | 91 | 54.1 | 77 | 45.8 | 168 | 100 | 41 | 53.2 | 36 | 46.7 | 77 | 100 | 132 | 53.8 | 113 | 46.1 | 245 | 100 |
| Kalkota | 84 | 53.8 | 72 | 46.1 | 156 | 100 | 42 | 55.2 | 34 | 44.7 | 76 | 100 | 126 | 54.3 | 106 | 45.6 | 232 | 100 |
| Gauhati | 27 | 57.4 | 20 | 42.5 | 47 | 100 | 6 | 42.8 | 8 | 57.1 | 14 | 100 | 33 | 54.1 | 28 | 45.9 | 61 | 100 |
| Delhi | 5 | 71.4 | 2 | 28.5 | 7 | 100 | 1 | 100 | 0 | 0 | 1 | 100 | 6 | 66.7 | 2 | 33.3 | 8 | 100 |
| Total | 207 | | 171 | | 378 | 100 | 90 | | 78 | | 168 | 100 | 297 | | 249 | | 546 | 100 |

Table 4.3: Distribution of Referrals by Centers for the Fiscal Year 2001-2002

| Center | Adult | | | | | | Children ≤ 18 years | | | | | | Total | | | | | |
|--------------|------------|------|------------|------|------------|------------|---------------------|------|-----------|------|------------|------------|------------|------|------------|------|------------|------------|
| | Male | | Female | | Total | | Male | | Female | | Total | | Male | | Female | | Total | |
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| Vellore | 115 | 59.9 | 77 | 40.1 | 192 | 100 | 51 | 56.0 | 40 | 43.9 | 91 | 100 | 166 | 58.6 | 117 | 41.3 | 283 | 100 |
| Kalkota | 149 | 61.3 | 94 | 38.6 | 243 | 100 | 47 | 55.2 | 38 | 44.7 | 85 | 100 | 196 | 59.7 | 132 | 40.2 | 328 | 100 |
| Gauhati | 19 | 70.3 | 6 | 29.6 | 25 | 100 | 2 | 33.3 | 4 | 66.6 | 6 | 100 | 21 | 63.6 | 12 | 36.3 | 33 | 100 |
| Delhi | 4 | 66.7 | 2 | 33.3 | 6 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 66.7 | 2 | 33.3 | 6 | 100 |
| Total | 287 | | 179 | | 100 | 100 | 100 | | 82 | | 184 | 100 | 387 | | 263 | | 650 | 100 |

Table 4.4: Distribution of Referrals by Centers for the Fiscal Year 2002-2003

| Center | Adult | | | | | | Children ≤ 18 years | | | | | | Total | | | | | |
|--------------|------------|------|------------|------|-----------|------------|---------------------|------|-----------|------|------------|------------|------------|------|------------|------|------------|------------|
| | Male | | Female | | Total | | Male | | Female | | Total | | Male | | Female | | Total | |
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| Vellore | 131 | 71.5 | 52 | 28.4 | 183 | 100 | 36 | 52.1 | 33 | 47.8 | 69 | 100 | 167 | 66.2 | 85 | 33.7 | 252 | 100 |
| Kalkota | 198 | 58.0 | 143 | 41.9 | 341 | 100 | 31 | 70.4 | 13 | 29.5 | 44 | 100 | 229 | 59.4 | 156 | 40.5 | 385 | 100 |
| Gauhati | 22 | 61.1 | 14 | 38.8 | 34 | 100 | 4 | 57.1 | 3 | 42.8 | 7 | 100 | 26 | 60.4 | 17 | 39.5 | 43 | 100 |
| Delh | 1 | 50.0 | 1 | 50.0 | 2 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 50.0 | 1 | 50.0 | 2 | 100 |
| Total | 352 | | 210 | | 80 | 100 | 71 | | 49 | | 120 | 100 | 423 | | 259 | | 682 | 100 |

Table 4.5: Distribution of Referrals by Centers for the Fiscal Year 2003-2004

| Center | Adult | | | | Children ≤ 18 years | | | | | | | | Total | | | | | |
|--------------|------------|------|------------|------|---------------------|------------|-----------|------|-----------|------|------------|------------|------------|------|------------|------|------------|------------|
| | Male | | Female | | Total | | Male | | Female | | Total | | Male | | Female | | Total | |
| | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % | # | % |
| Vellore | 74 | 55.6 | 59 | 44.3 | 133 | 100 | 30 | 57.6 | 22 | 42.3 | 52 | 100 | 104 | 56.2 | 81 | 43.7 | 185 | 100 |
| Kalkota | 202 | 54.8 | 164 | 44.5 | 366 | 100 | 39 | 51.3 | 37 | 48.6 | 76 | 100 | 241 | 54.5 | 201 | 45.4 | 442 | 100 |
| Gauhati | 9 | 69.2 | 4 | 30.7 | 13 | 100 | 3 | 60.0 | 2 | 40.0 | 5 | 100 | 12 | 66.7 | 6 | 33.3 | 18 | 100 |
| Delhi | 4 | 80.0 | 1 | 20.0 | 5 | 100 | 0 | 0 | 1 | 100 | 1 | 100 | 4 | 66.7 | 2 | 33.3 | 6 | 100 |
| Total | 289 | | 228 | | 517 | 100 | 72 | | 62 | | 134 | 100 | 361 | | 290 | | 651 | 100 |

Table 4.6 shows a cumulative distribution for past five fiscal years with 1,768 patients belonging to rural areas, while 1,252 patients came from urban centers. Similarly 679 patients referred for care to India were government workers or their dependents, while a total of 2,341 patients belonged to non government category. Bhutan with the population of about 7,00,000 had referred 3,020 patients out of which 679 belonged to Government service and 2,341 belonged to non-government. Considering the estimations on occupation for the total population in Bhutan the ratio of Government workers referred for care was 679/20,000 while the ration for non - Government worker was 2,341/680,000

Table 4.6: Referral by Residence and by Occupation (Cumulative of 5 years)

| Residence | Occupation | | | | | | |
|-----------|------------|------|----------------|------|-------|------|--|
| | Government | | Non Government | | Total | | |
| | 20,000 | | 680,000 | | | | |
| | # | % | # | % | # | % | |
| Urban | 462 | 68.1 | 790 | 33.7 | 1,252 | 41.6 | |
| Rural | 217 | 31.9 | 1,551 | 66.3 | 1,768 | 58.5 | |
| Total | 679 | 100 | 2,341 | 100 | 3,020 | 100 | |

Note no detailed population data were available on occupation (Government and Non Government workers) and the figures represent only a crude estimation.

4.2 Operating Expenditures for the Fiscal Year 1999-2004

Figure 4.3: reveals that the total operating expenditure for care in India has been increasing steadily over the five years. As presented in Table 4.7 this increase can be observed in the total operating expenditure, the total number of referrals as well as the average cost per referral.

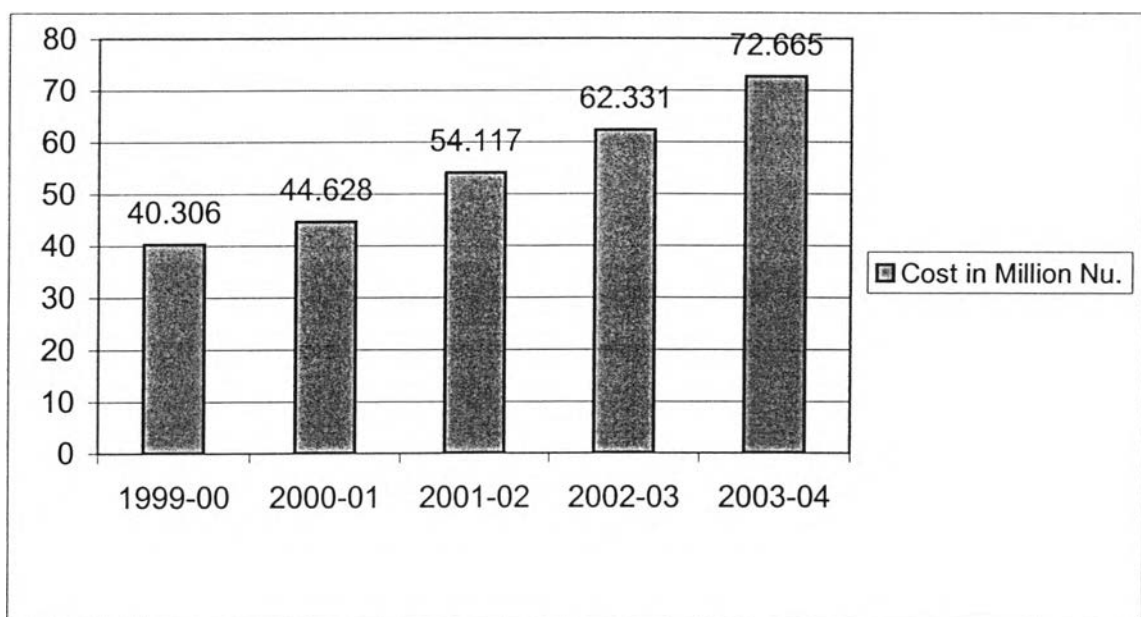


Figure 4.3: Total Operating Expenditure for the Fiscal Years 1999-20004

Figure 4.4: shows that the average operating expenditure over the five years has been gradually increasing and a sharp increase in the average operating expenditure was noticed during 2002-03 and 2003-04 amounting to over 20% per annum.

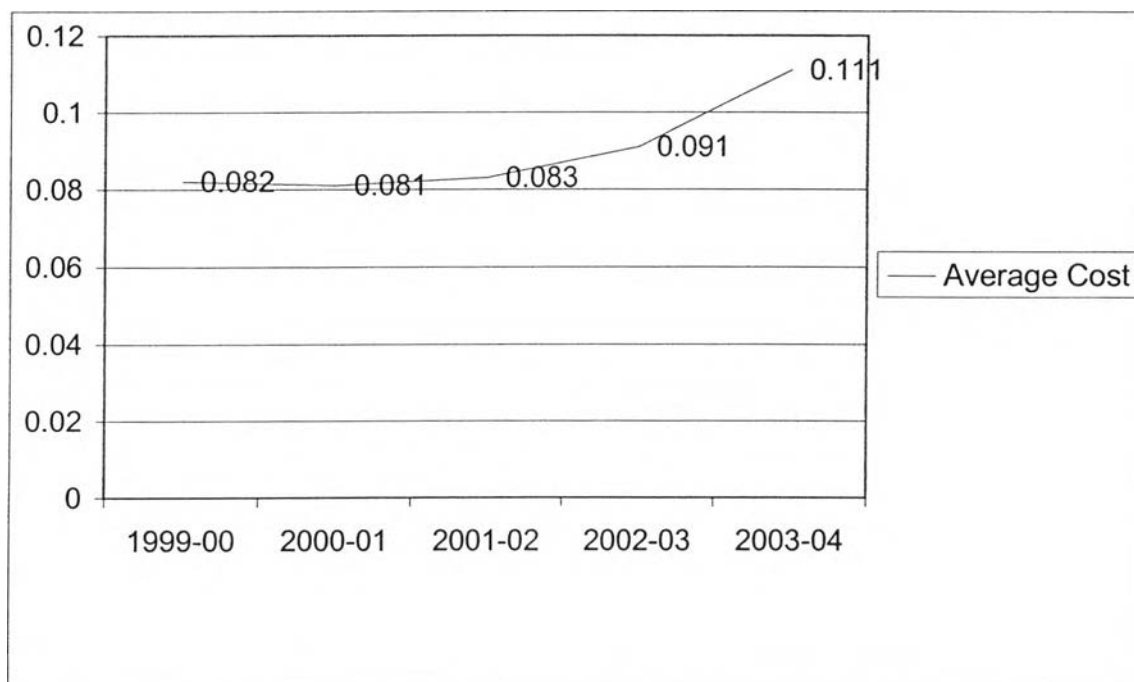


Figure 4.4: Average Operating Expenditure for the Fiscal years 1999-2004

Figure 4.5 shows that the total numbers of patients have been increasing over the years except a slight decrease during 2003-2004. However, the total operating expenditure was on increase over the years.

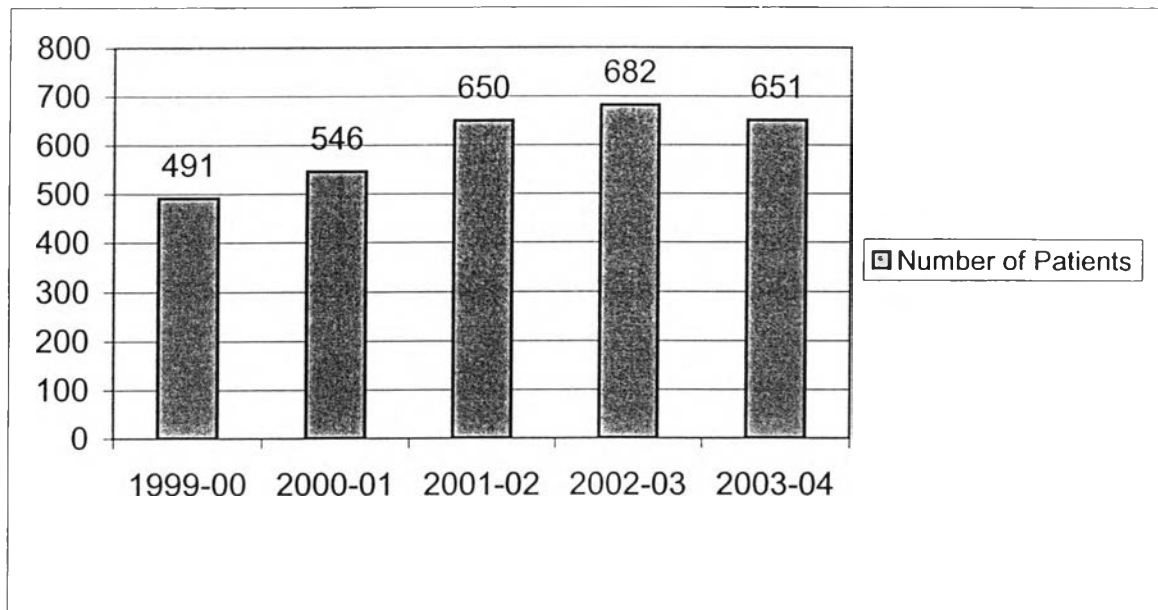


Figure 4.5: Total number of Patients Referred during Fiscal Year 1999-2004

Table 4.7 represents the operating expenditure incurred by the Royal Government was at Nu 40.306 million during 1999-2000, Nu 44.628 million during 2000-2001, Nu 54.117 million during 2001-2002, Nu 62.331 million during 2002-2003 and Nu 72.665 million during 2003-2004. A total of 3,020 patients were referred for care to India at a cost of Nu 274.027 million. The average operating expenditure per patient was at Nu.082 million in 1999-2000, Nu .081 million in 2000-2001, Nu .083 million during 2001-2002, Nu .091million in 2002-2003 and Nu .111 million during 2003-2004 respectively. The cumulative average operating expenditure of five fiscal years per patient remained at Nu.090 million.

Table 4.7: Total Operating Expenditures incurred at 4 Centers for the Fiscal Years 1999-2004

| Fiscal Year | 1999-2000 | 2000-2001 | 2001-2002 | 2002-2003 | 2003-2004 | Grand Total |
|--------------------|-----------|-----------|-----------|-----------|-----------|-------------|
| Number of Patients | 491 | 546 | 650 | 682 | 651 | 3020 |
| Op. expenditure | 40.306 | 44.628 | 54.117 | 62.331 | 72.665 | 274.027 |
| Average/patient | .082 | .081 | .083 | .091 | .111 | .090 |

Nu in Million. \$1 = Nu/Rs 43/- .Bhutanese currency is tied or at par with Indian Rupee

Figure 4.6 shows that the overall medical expenditure had been constantly increasing during 1999 to 2002 and took a sharp rise from 2002 onwards, with over 10% per year during 2004. A detailed breakdown on medical cost is presented in Table 4.8

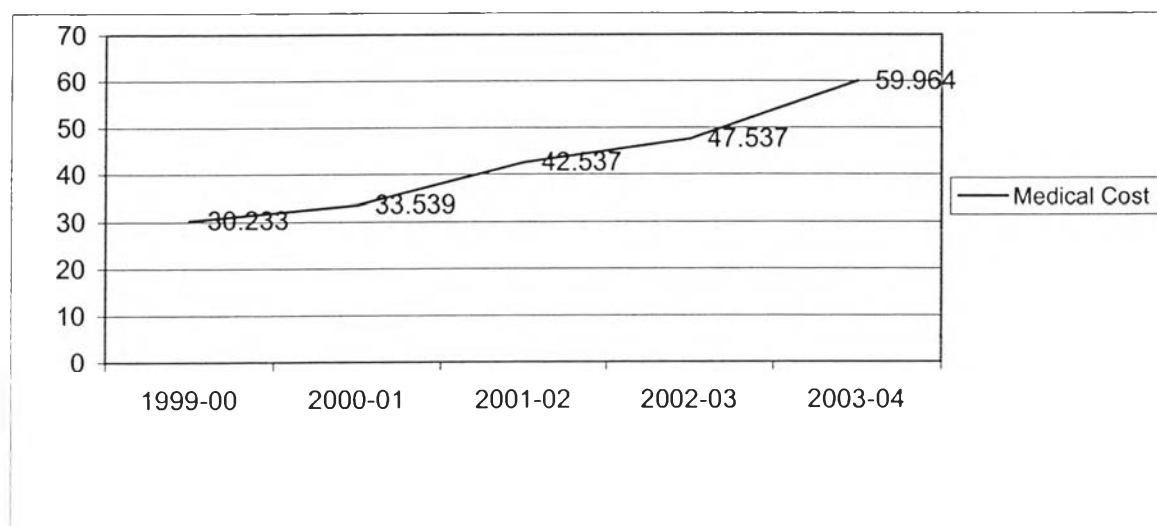


Figure 4.6: Medical Expenditure for the Fiscal Year 1999-2004

Figure 4.7 shows that the travel expenditure by air took a sharp increase from 1999 to 2003 and moderately decreased during 2003- 2004. The daily allowance expenditure showed a fluctuating graph. Travel by land and administrative expenditures were increasing at a steady pace.

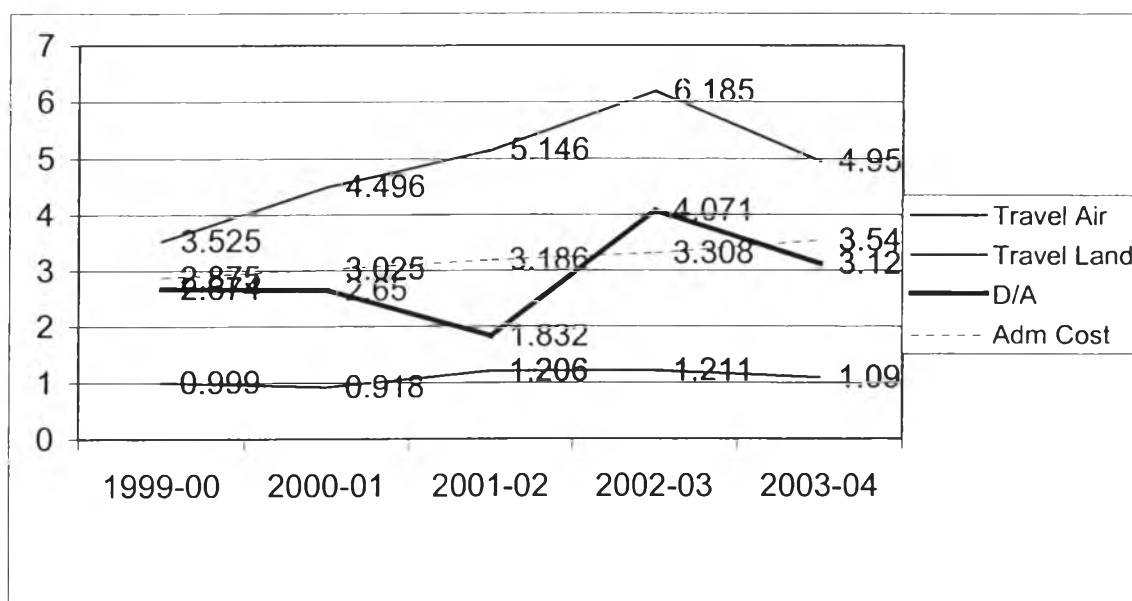


Figure 4.7: Expenditure by Air and Land and expenditure on Daily Allowance and Administration FY

Table 4.8 presents a breakdown of operating expenditure. A total of Nu 40.306 million operating expenditure was incurred during 1999-2000, while medical expenditure accounted for Nu 30.223 (75.0%) followed by air travel expenditure Nu 3.525 million (8.8%).

During 2000-2001 the medical expenditure was Nu 33.539 million (75.7%) followed by operating expenditure by air travel Nu 4.496 million (10.1%). A total operating expenditure of Nu 44.682 million was spent during the year. Fiscal Year 2001-2002 saw a sum of Nu 42.537 million (78.7%) as medical expenditure followed

by air travel expenditure Nu 5.146 million (9.51%). A sum of Nu 54.117 million was spent as total operating expenditure during the period.

During 2002-2003 the medical expenditure rose to Nu 47.537 million (76.2%) accompanied by air travel Nu 6.185 million (9.9%). A total of Nu 62.311million was the total operating expenditure for the year. There was a substantial increase in medical expenditure during fiscal year 2003-2004. The medical expenditure accounted for Nu 59.964million(82.5%) with air travel Nu 4.950 million (6.9%). There was a slight decrease in the percentage of operating air travel. In total a sum of Nu 72.665 million was spent for operating expenditure during the year for referrals to India.

Table 4.8: Operating Expenditures for the Fiscal Years 1999-2004

| Year | 1999-2000 | | 2000-2001 | | 2001-2002 | | 2002-2003 | | 2003-2004 | |
|--------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|
| | # | % | # | % | # | % | # | % | # | % |
| Med. | 30.233 | 75.0 | 33.539 | 75.7 | 42.537 | 78.7 | 47.537 | 76.2 | 59.964 | 82.5 |
| Exp | | | | | | | | | | |
| Travel | 3.525 | 8.8 | 4.496 | 10.1 | 5.146 | 9.5 | 6.185 | 9.9 | 4.950 | 6.9 |
| Air | | | | | | | | | | |
| Travel | .999 | 2.5 | .918 | 2.5 | 1.206 | 2.2 | 1.211 | 1.9 | 1.090 | 1.5 |
| Land | | | | | | | | | | |
| Daily | 2.674 | 6.6 | 2.650 | 5.9 | 1.832 | 3.3 | 4.071 | 6.5 | 3.121 | 4.3 |
| Allow | | | | | | | | | | |
| Admn | 2.875 | 7.1 | 3.025 | 6.7 | 3.186 | 5.9 | 3.308 | 5.3 | 3.540 | 4.8 |
| Exp | | | | | | | | | | |
| Total | 40.306 | 100 | 44.682 | 100 | 54.117 | 100 | 62.311 | 100 | 72.665 | 100 |

Nu in Million. \$1 = Nu/Rs 43/-. Bhutanese currency is tied or at par with Indian Rupee

4.3 Distribution of Operating Expenditure by Specialties for the Fiscal Years 1999-2004

Figure 4.8 presents the distribution of operating expenditure by medical specialty. From this pie chart it is seen that the medicine (49%) followed by surgery (19%) and pediatrics (9%) were the major consumers of operating expenditures.

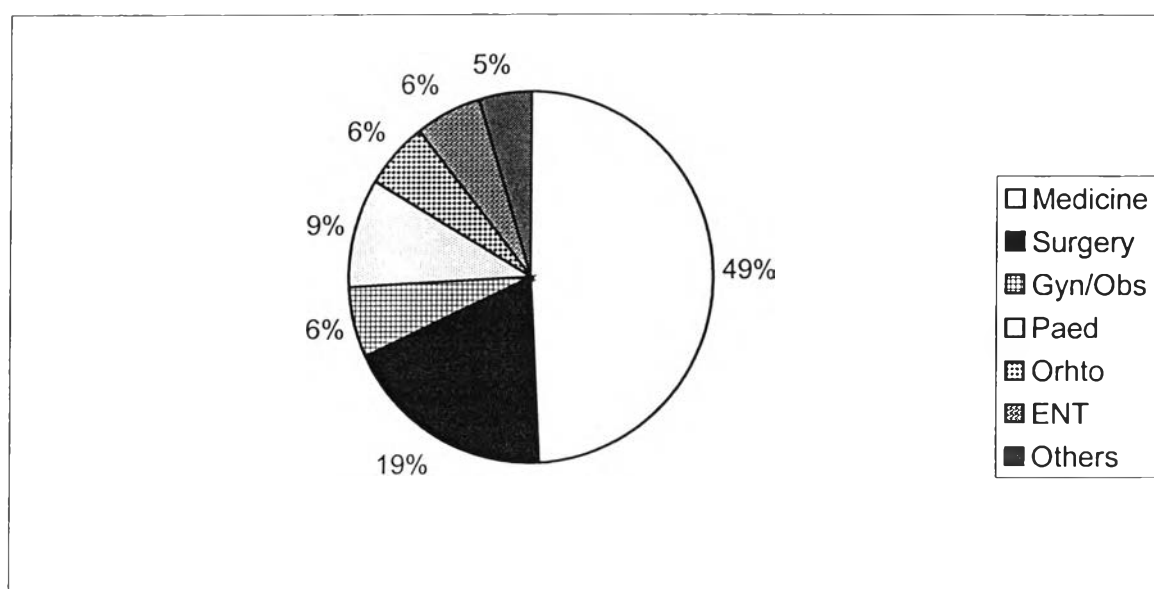


Figure 4.8: Percentage of Operating Expenditure by Specialities for the Fiscal Years 1999-2004

Table 4.9 represents the operating expenditure breakdown, average operating expenditure and percentage of expenditure by specialty during 1999-2004. A total of Nu 274.027 million operating expenditure was spent and 3,020 patients were provided treatment during the 5 years. Its overall operating average per patient remained at Nu .090 million.

The medical specialty accounted for Nu 134.756 million (49.2%) operating expenditure with an average of Nu.119 million per patient and 1,130 patients were referred during five years.

The specialty of surgery spent Nu 51.354 million (18.7%) operating expenditure and had Nu .078 million as an average operating expenditure per case. There were 655 patients during five years.

Pediatrics incurred Nu 25.869 million (9.4%) operating expenditure, its average operating expenditure was Nu .086 million per patient. A total of 289 patients were referred for care in India during five years. Gynaecology/Obtetrics incurred operating expenditure of Nu16.962 million (6.2%) and referred 274 patients. Its average operating expenditure was Nu .061 million per patient for the 5 year period.

Orthopedics incurred Nu .15.922 million (5.9%) operating expenditure and referred 192 patients. Its average operating expenditure per patient was Nu .082 million during five years. The specialty of ENT referred 255 patients at an operating expenditure of Nu .15.950 million (5.9%). It average operating expenditure was Nu .070 million per patient for five years.

Dentistry incurred an operating expenditure of Nu 6.144 million and shared 2.2% of the total operating expenditure. A total of 90 patients were referred for care outside for five year period. Ophthalmology incurred an operating expenditure of Nu 5.311 million and shared 1.9% of the total operating expenditure. There were 95 patients referred in five years.

Psychiatry had 20 patients and spent Nu 1.224 million operating expenditure and shared 0.4% of total operating expenditure in five years. Dermatology had 11 patients at an operating expenditure of Nu .532 million. It had the share of 0.9% of the total operating expenditure of five years.

Table 4.9: Distribution of Operating expenditures by Specialties for the Fiscal Years 1999-2004

| Fiscal Year Spec. | 1999-2000 | | 2000-2001 | | 2001-2002 | | 2002-2003 | | 2003-2004 | | Total | | | |
|----------------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|------------|---------------|-------------|----------------|--------------|------------|
| | # | Cost | # | Cost | # | Cost | # | Cost | # | Cost | # | Cost | Ave. Cost | % |
| Med. | 194 | 21.136 | 212 | 22.981 | 235 | 26.930 | 244 | 29.329 | 245 | 34.390 | 1130 | 134.756 | .119 | 49.2 |
| Surg. | 92 | 6.601 | 105 | 7.810 | 143 | 11.454 | 160 | 12.342 | 155 | 13.147 | 655 | 51.354 | .078 | 18.7 |
| G/Ob. | 38 | 1.701 | 44 | 1.983 | 64 | 3.050 | 69 | 3.721 | 59 | 6.505 | 274 | 16.960 | .061 | 6.2 |
| Paed. | 36 | 3.669 | 49 | 4.282 | 70 | 4.803 | 73 | 6.439 | 70 | 6.676 | 298 | 25.869 | .086 | 9.4 |
| Ortho | 38 | 2.302 | 43 | 2.694 | 32 | 2.275 | 47 | 4.616 | 32 | 4.035 | 192 | 15.922 | .082 | 5.9 |
| ENT | 47 | 2.510 | 51 | 2.694 | 55 | 2.774 | 51 | 3.207 | 51 | 4.986 | 255 | 15.950 | .070 | 5.9 |
| Psyc. | 5 | .232 | 3 | .259 | 3 | .238 | 6 | .269 | 3 | .226 | 20 | 1.224 | .061 | 0.4 |
| Derm. | 2 | .078 | 4 | .127 | 1 | .028 | 2 | .068 | 2 | .231 | 11 | .532 | .048 | 0.2 |
| Dent. | 20 | 1.058 | 18 | 1.005 | 25 | 1.290 | 16 | 1.407 | 11 | 1.396 | 90 | 6.144 | .068 | 2.2 |
| Ophth | 19 | 1.019 | 17 | 1.102 | 22 | 1.287 | 14 | .920 | 23 | 1.073 | 95 | 5.311 | .055 | 1.9 |
| Total | 491 | 40.306 | 546 | 44.687 | 650 | 54.117 | 282 | 62.311 | 651 | 72.665 | 3020 | 274.027 | .090 | 100 |

Nu in Million. \$1 = Nu/Rs 43/-. Bhutanese currency is tied or at par with Indian

4.4 Breakdown of Operating Expenditures by Centers for the Fiscal Year 2003-2004

Figure 4.9 shows that a sum of Nu 19.688 million was spent as operating expenditure at Vellore, Nu 51.769 million operating expenditure at Kalkota, Nu .969 million operating expenditure at Gauhati and Nu .233 million operating expenditure at Delhi during the fiscal year.

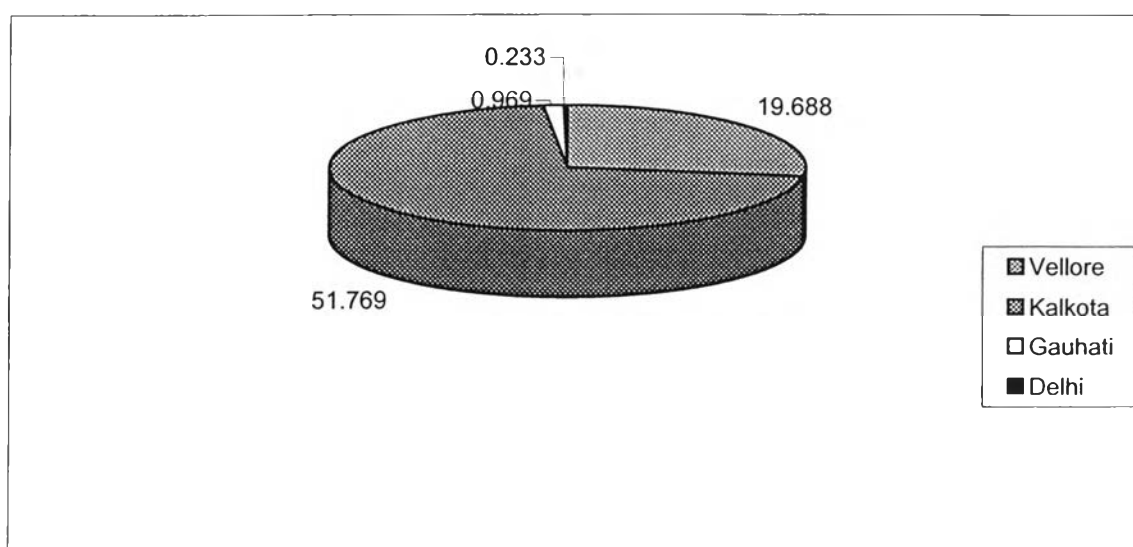


Figure 4.9: Breakdown of Operating Expenditure by Centers Fiscal Year 2003-2004

Table 4.10 shows that 94 patients were referred for the medicine specialty to Vellore at an operating expenditure of Nu 12.657 million. The medical expenditure was Nu 10.983 million, Nu.376 million expenditure for daily allowances, Nu .846 million for travel expenditure and Nu .470 administrative operating expenditure. The average expenditure for the medical specialty was Nu .134 million and its share on total expenditure was 64.4%.

The surgical specialty had 24 patients at Nu 1.436 million out of which medical expenditure was Nu 1.004million, expenditure for DSA Nu .096 million, travel expenditure Nu .216million and administrative expenditure, Nu .120 million. The share of total medical expenditure of the Department at Vellore was 7.3%

Orthopedics had 13 patients at a total expenditure of Nu 1.248 million with 6.3% of total operating expenditure as its share on over all expenditure. Pediatrics had 30 patients at Nu 1.248 million with its average operating expenditure of Nu .090 million with 13.8% of total operating expenditure followed by other specialties.

Table 4.10: Breakdown of Operating Expenditure by Specialties at Vellore for the Fiscal Year 2003-2004

| Specialty | # | Med. Cost | D/A. | Travel | Adm Cost | T/Op. Cost | A/Op Cost | % |
|--------------|------------|---------------|-------------|--------------|-------------|---------------|--------------|------------|
| Medicine | 94 | 10.983 | .376 | .846 | .470 | 12.675 | .134 | 64.4 |
| Surgery | 24 | 1.004 | .096 | .216 | .120 | 1.436 | .059 | 7.3 |
| Gyana/Obs | 3 | .138 | .012 | .027 | .015 | .192 | .064 | 0.9 |
| Pediatrics | 30 | 2.134 | .143 | .278 | .163 | 2.718 | .090 | 13.8 |
| Orthopedics | 13 | 1.012 | .054 | .117 | .065 | 1.248 | .096 | 6.3 |
| ENT | 5 | .175 | .020 | .056 | .030 | .285 | .057 | 1.4 |
| Psychiatry | 1 | .063 | .004 | .009 | .005 | .081 | .081 | 0.4 |
| Dermatology | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dentistry | 3 | .210 | .012 | .027 | .015 | .264 | .088 | 1.3 |
| Ophthalmo. | 18 | .510 | .072 | .162 | .090 | .789 | .043 | 4.1 |
| Total | 190 | 16.139 | .789 | 1.738 | .973 | 19.668 | .100 | 100 |

Nu in Million. \$1 = Nu/Rs 43/-. Bhutanese currency is tied or at par with Indian Rupee

Table 4.11 shows at Kalkota during 2003- 2004, 143 patients were referred for medical specialty at an operating expenditure of Nu 21.129 million out of which a sum of Nu18.55 million accounted for medical expenditure, Nu .572 million expenditure for daily allowance, Nu 1.287million expenditure for travel and Nu .715million for administrative expenditure. The specialty had Nu .147 million as an average operating expenditure and the share of expenditure of medicine at Kolkata was 40.8% of the total operating expenditure.

The surgical specialty referred 129 patients at an operating expenditure of Nu 11.576 million, out of which Nu 9.249 million accounted for medical expenditure, Nu .516 million daily allowance expenditure, Nu 1.161 million expenditure for travel and Nu .650 million for administrative expenditure. The average operating expenditure per patient was Nu. 089 million. The specialty had 22.4% of the total operating expenditure as its share at Kalkota.

Gynaecology/Obstetrics managed to refer 56 patients at an operating expenditure of Nu 6.308 million. Nu 5.300 million was incurred in medical expenditure, Nu .224 million for daily allowances expenditure, Nu .504 million for travel expenditure and Nu .280 million for administrative expenditure. The specialty incurred a total of 12.2% operating expenditure.

Pediatrics had 37 Patients at Nu 3.716 million with an average expenditure Nu .112 million and received 7.2% of the total operating expenditure of the center. Its medical expenditure was Nu 3.050 million, Nu .148 million for daily allowances, Nu .333 million for travel expenditure and Nu .185 million administrative expenditure.

The Orthopedics specialty referred 16 patients at an operating expenditure of Nu 2.584 million with Nu .100million as its average operating expenditure. It spent Nu 2.260 million as medical expenditure, Nu .064 million expenditure for daily allowances, Nu .144 million as expenditure for travel and Nu .080 million for administrative expenditure.

The ENT specialty had 46 patients and incurred a sum of Nu 4.700 million at an average expenditure cost Nu.102 million and had 9.8% as its share of total operating expenditure. The medical expenditure was Nu 3.870 million, Nu.184 million expenditure for daily allowances, Nu .414 million travel expenditure and Nu .230 million administrative expenditure.

The specialty of Psychiatry referred 2 patients at an operating expenditure of Nu .145 million. The average operating expenditure was Nu .072million per patient and the percentage of operating expenditure of the specialty was .02%. It spent Nu .109 million as medical expenditure, Nu .008 million daily allowances cost, Nu.018 million expenditure for travel and Nu .010 million for administrative expenditure.

Dermatology referred 2 patients at an operating expenditure of Nu .231 million and the average operating expenditure per patient was Nu .115 million. Its share of expenditure was 0.45% at the center. It spent Nu .194 million on medical expenditure, Nu .008 million for daily allowances expenditure, Nu .018 million for travel expenditure and Nu .010 million for administrative expenditure.

The dentistry specialty had 8 patients and spent of Nu 1.132 million at an average operating expenditure, Nu.141 million per patient and had 2.2% share of total operating expenditure at the center. The medical expenditure was Nu .998 million, Nu .032 million was spent for daily allowance, Nu .072 million for travel expenditure and Nu .040 million for administrative expenditure.

Ophthalmology had 5 patients at Nu .284 million with average operating expenditure of Nu .056 million per patient and had 0.5% share of total operating expenditure.

Table 4.11: Breakdown of Operating Cost by Specialties at Kalkota for the Fiscal Year 2003-2004

| Specialty | # | Med. Cost | D/A | Travel | Adm Cost | T/ Op Cost | A/Op Cost | % |
|--------------|------------|---------------|--------------|--------------|--------------|---------------|--------------|------------|
| Medicine | 143 | 18.555 | .572 | 1.287 | .715 | 21.129 | .147 | 40.8 |
| Surgery | 129 | 9.249 | .516 | 1.161 | .650 | 11.576 | .089 | 22.4 |
| Gyane/Obs | 56 | 5.300 | .224 | .504 | .280 | 6.308 | .112 | 12.2 |
| Pediatrics | 37 | 3.050 | .148 | .333 | .185 | 3.716 | .100 | 7.2 |
| Orthopedics | 16 | 2.260 | .064 | .144 | .080 | 2.548 | .163 | 4.9 |
| ENT | 46 | 3.870 | .184 | .414 | .230 | 4.700 | .102 | 9.8 |
| Psychiatry | 2 | .109 | .008 | .018 | .010 | .145 | .072 | .02 |
| Dermatology | 2 | .194 | .008 | .018 | .010 | .231 | .115 | 0.4 |
| Dentistry | 8 | .998 | .032 | .072 | .040 | 1.132 | .141 | 2.2 |
| Ophthalmo. | 5 | .194 | .020 | .045 | .025 | .284 | .056 | 0.5 |
| Total | 444 | 43.779 | 1.776 | 3.996 | 2.225 | 51.769 | .120 | 100 |

Nu in Million. \$1 = Nu/Rs 43/-. Bhutanese currency is tied or at par with Indian Rupee

Table 4.12 shows that during fiscal year 2003-2004 Gauhati received 7 patients from the medical specialty at a total operating expenditure of Nu .457 million. The average operating expenditure per patient was Nu .065 million and it had the shared 47.1% of the total operating expenditure. Nu .320 million was spent on medical expenditure Nu .028 million daily allowances expenditure, Nu .063million for travel expenditure cost and Nu .035 million for administrative expenditure.

Surgical specialty referred 1 patient at Nu .090million and had 19.3% share of total operating expenditure. Nu .072 million was spent on medical expenditure, Nu .004 million for daily allowance, Nu.009 million for travel expenditure and Nu .005 million for administrative expenditure.

Pediatrics specialty had 2 patients at an operating total expenditure of Nu .241 million and had average operating expenditure of Nu .080million. Its percentage share of total operating expenditure was 24.9% at Gauhati. The specialty spent Nu.184 million on medical expenditure, Nu .012 million daily allowances expenditure, Nu .027 million for travel expenditure and Nu .0015million administrative expenditure.

Orthopedics specialty managed to refer 2 patients at an operating expenditure of Nu .181 million with average operating expenditure of Nu .103 million. The percentage of share of total operating expenditure was 18.7%.

Table 4.12: Breakdown of Operating Expenditure by Specialties at Gauhati for the Fiscal Year 2003-2004

| Specialty | # | Med. Cost | D/A. | Travel Cost | Adm Cost | T/Op. Cost | A/Op. Cost | % |
|--------------|-----------|--------------|-------------|----------------|-------------|---------------|---------------|------------|
| Medicine | 7 | .320 | .028 | .063 | .035 | .457 | .070 | 47.1 |
| Surgery | 1 | .072 | .004 | .009 | .005 | .090 | .090 | 9.3 |
| Pediatrics | 3 | .184 | .012 | .027 | .015 | .241 | .080 | 24.9 |
| Orthopedics | 3 | .124 | .012 | .027 | .015 | .181 | .160 | 18.7 |
| Total | 14 | .700 | .056 | .126 | .070 | .969 | .070 | 100 |

Nu in Million. \$1 = Nu/Rs 43/-. Bhutanese currency is tied or at par with Indian rupee

Table 4.13 shows that the specialty of medicine referred 1 patient in Delhi at an operating expenditure of Nu .129 and its percentage of share of operating expenditure was 55.4%. It spent Nu .111 million as medical expenditure, Nu .004 million daily allowances expenditure, Nu .009 million as travel expenditure and Nu .005 million expenditure of administration.

Table 4.13: Breakdown of Operating Expenditure by Specialties at Delhi for the Fiscal Year 2003-2004

| Specialty | # | Medi. Cost | D/A | Travel Cost | Adm Cost | T/Op Cost | A/Op Cost | % |
|--------------|----------|---------------|-------------|----------------|-------------|--------------|--------------|------------|
| Medical | 1 | .111 | .004 | .009 | .005 | .129 | .129 | 55.4 |
| Surgical | 1 | .027 | .004 | .009 | .005 | .045 | .045 | 19.3 |
| Orthopedics | 2 | .023 | .008 | .018 | .010 | .059 | .060 | 25.3 |
| Total | 4 | .161 | .016 | .036 | .020 | .233 | .060 | 100 |

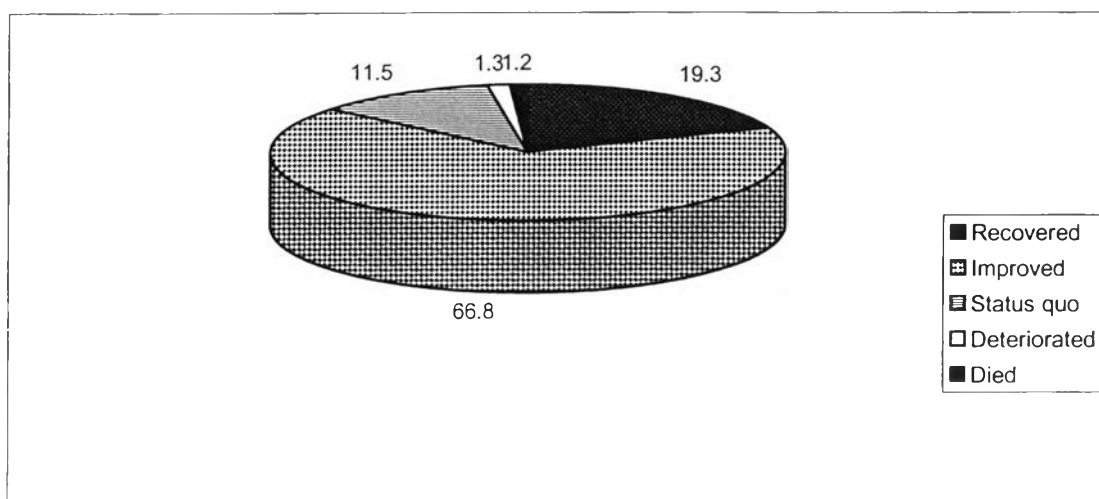
Nu in Million. \$1 = Nu/Rs 43/-. Bhutanese currency is tied or at par with Indian Rupee

The surgical specialty had 1 patient at an operating expenditure Nu .045 million and its total share of operating expenditure was 19.3%. Similarly Orthopedics referred 2

patients at an operating expenditure Nu .060 million and its share of total operating expenditure was 25.3% at Delhi.

4.5 Treatment Outcomes for the Fiscal Year 2003-2004

Figure 4.10 and Table 4.14 reveal that the cumulative satisfactory treatment outcomes for the year 2003-2004 was 86.1% for patients falling in categories of recovered or improved and 14.0% for patients in status quo, deteriorated or dead categories. A detailed breakdown for each center and each outcome is presented in the Tables at appendices. The intentions of carrying out treatment outcomes for a period of five years could not be done due to serious lack of diagnosis details and my own limitation of medical knowledge.



**Figure 4.10: Cumulative Treatment Outcomes of four centers
for the FY 2003-2004**

Table 4.14: Cumulative Treatment Outcomes for all Centers for the Fiscal Year 2003-2004

| Outcome | Recovered | | Improved | | Status quo | | Deteriorated | | Dead | | Total | |
|-----------------|-----------|------|----------|------|------------|------|--------------|-----|------|-----|-------|-----|
| | # | % | # | % | # | % | # | % | # | % | # | % |
| All specialties | 126 | 19.3 | 433 | 66.8 | 75 | 11.5 | 9 | 1.3 | 8 | 1.2 | 651 | 100 |

Table 4.15 shows that the treatment outcomes for the specialty of medicine was 84.4%, 85.7% surgery, 77.8% gynaecology, 91.3% Pediatrics, 90.5% orthopaedics, 90.2% ENT, 100% dermatology, 100% Psychiatry, 81.8% dentistry and 82.6% ophthalmology for the fiscal year 2003-2004.

4.6 Effectiveness of Treatment Outcomes for the Fiscal Year 2003-2004

Table 4.15 shows that the effectiveness of treatment outcomes for medicine was 105.5%, surgery 107.1%, Gynae/Obs 97.2%, Orthopedics 114.1%, ENT 112.7%, Dermatology 125%, Psychiatry 125%, Dentistry 102.2% and Ophthalmology 103.2% for the fiscal year 2003-2004. This exercise was taken up for one year only due to lack of adequate detailed medical records to carryout meaningful analysis of effectiveness of treatment outcomes.

Table 4.15: Treatment Outcomes and Effectiveness Outcomes for the Fiscal Year 2003-2004

| Specialty | Recovered | | Improved | | Status quo | | Deteriorated | | Dead | | Standard | Out-come | Effective-ness |
|-----------|-----------|------|----------|------|------------|------|--------------|-----|------|-----|----------|----------|----------------|
| | # | % | # | % | # | % | # | % | # | % | | | |
| Medicine | 33 | 13.0 | 175 | 71.4 | 31 | 12.7 | 4 | 2.0 | 2 | 0.9 | 80 | 84.4 | 105.5 |
| Surgery | 37 | 23.8 | 96 | 61.9 | 20 | 12.9 | 0 | 0 | 2 | 1.4 | 80 | 85.7 | 107.1 |
| Gyn/Obs | 4 | 6.7 | 42 | 71.1 | 11 | 18.6 | 2 | 3.6 | 0 | 0 | 80 | 77.8 | 97.2 |
| Paed | 31 | 44.2 | 33 | 7.1 | 4 | 5.9 | 0 | 0 | 2 | 2.8 | 80 | 91.3 | 114.1 |
| Orhto | 6 | 21.9 | 23 | 68.7 | 3 | 9.4 | 0 | 0 | 0 | 0 | 80 | 90.5 | 113.1 |
| ENT | 10 | 19.6 | 36 | 70.5 | 3 | 5.9 | 2 | 3.9 | 0 | 0 | 80 | 90.2 | 112.7 |
| Derma | 2 | 100 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 80 | 100 | 125.0 |
| Psych | 0 | 0 | 3 | 100 | 0 | 0 | | 0 | 0 | 0 | 80 | 100 | 125.0 |
| Dentistry | 0 | 0 | 9 | 81.8 | 1 | 9.9 | 0 | 0 | 1 | 9.9 | 80 | 81.8 | 102.2 |
| Ophth | 3 | 8.7 | 17 | 73.9 | 2 | 13.4 | 0 | 0 | 1 | 4.3 | 80 | 82.6 | 103.2 |