

BROWN AND CLAPPERTON LTD.
The Cost Implications of HIV/AIDS

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October 1996

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Brown and Clapperton Limited

The Cost Implications of HIV/AIDS

1. Business Profile

1.1 Activities

The Brown and Clapperton Group ('B&C') has 4 major business interests:

- sales of equipment for industrial, agricultural, and domestic use and of electrical and electronic hardware;
- steel fabrication and engineering and the construction of equipment, tools, and metal products;
- electrical goods and motor vehicle servicing;
- electrical and refrigeration systems contracting.

Business is conducted throughout Malawi from offices located in Blantyre, Lilongwe and Mzuzu.

1.2 Ownership

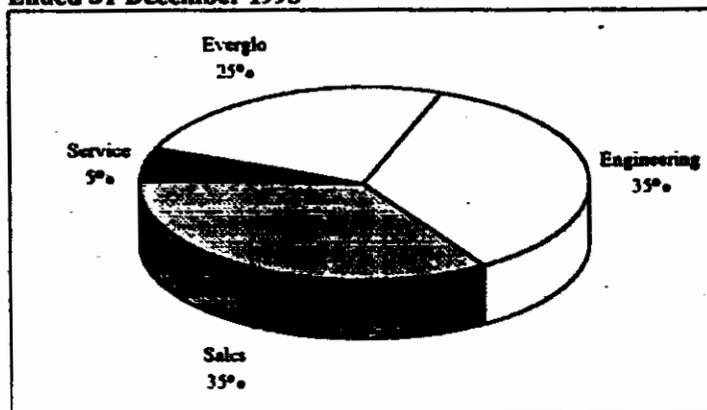
Brown and Clapperton Limited is the legal entity within which the activities of the group are conducted. Brown and Clapperton Limited is a privately owned company registered in Malawi.

1.3 Management

Business activities are managed and accounted for in operating divisions - Sales, Engineering, Service, and Everglo. Administration, finance, shipping and personnel comprise the activities of a fifth division. Each operating division has a Divisional Manager who reports to the Group Operations Director and, in turn, the Group Chief Executive. There are, in addition, Regional Managers for the Lilongwe and Mzuzu operations who report to the Group Operations Director.

1.4 Financial Performance

Figure 1-1: B&C, Analysis of Turnover for the 12 Months Ended 31 December 1995



Group turnover in the year to 31 December 1995 totalled K99.4 million. The highest contributions to group turnover were made by the Engineering Division (K35.3 million) and the Sales Division (K34.3 million).

2. The AIDS Epidemic in Malawi

2.1 Reporting System

The National AIDS Control Programme ('NACP') within the Ministry of Health is the body responsible for monitoring and reporting on the AIDS epidemic in Malawi. The AIDS Cases Surveillance System is based on monthly returns received from 61 screening sites throughout the country. The return contains demographic, clinical, and laboratory information relating to AIDS cases. Statistics produced by NACP are distributed nationally within the health sector, to the donor community and other interested parties, and to the World Health Organisation ('WHO').

2.2 Definition of AIDS

WHO criteria are used for the clinical diagnosis of AIDS but, in addition, for the purposes of reporting to NACP, a single positive HIV test result must be obtained. NACP acknowledges that the positive test requirement gives rise to under-reporting given that the limited supply of test kits often requires that they are held in reserve for the testing of donated blood, that there will be patients whose condition can be clinically diagnosed as AIDS but who refuse to be tested (and therefore reported), and that the administration of the HIV test requires a level of personnel and expertise that is not always available. In 1995, as in the previous three years, over 80% of suspected AIDS cases were substantiated by testing. As a result, and on the recommendation of NACP, the Ministry of Health has decided that, from 1996 onwards, symptomatic diagnosis of AIDS will be sufficient for NACP reporting purposes.

2.3 Profile of the Epidemic

Transmission

The AIDS epidemic in Malawi is caused by HIV-1. However, given that in recent years there has been an influx into Malawi of refugees from Mozambique where HIV-2 is known to be prevalent, blood donations are also monitored for HIV-2.

The major mode of transmission in Malawi is by heterosexual sex. Of the new AIDS cases reported in 1995, it was estimated that heterosexual sexual contact was accountable for approximately 90%, mother to child transmission 8% and blood transfusion only 2%.

AIDS Cases

Reported AIDS cases provide an indication of the extent and spread of HIV infection in a previous period. The information obtained from the analysis of new AIDS cases can only be regarded as indicative due to the problem of under-reporting and the variability in length of the incubation period.

There were 5,209 new AIDS cases reported in 1995. The cumulative number of cases reported since 1985, when the first AIDS case was reported in Malawi, is 41,812. In the last five years, the annual number of new cases appears to have levelled at approximately 5,000 (see Figure 2-1). To what extent this level has been constrained by the technical capacity to test for HIV will become clearer when reporting to NACP is on the basis of symptomatic diagnosis only.

Figure 2-1: Malawi, New AIDS Cases

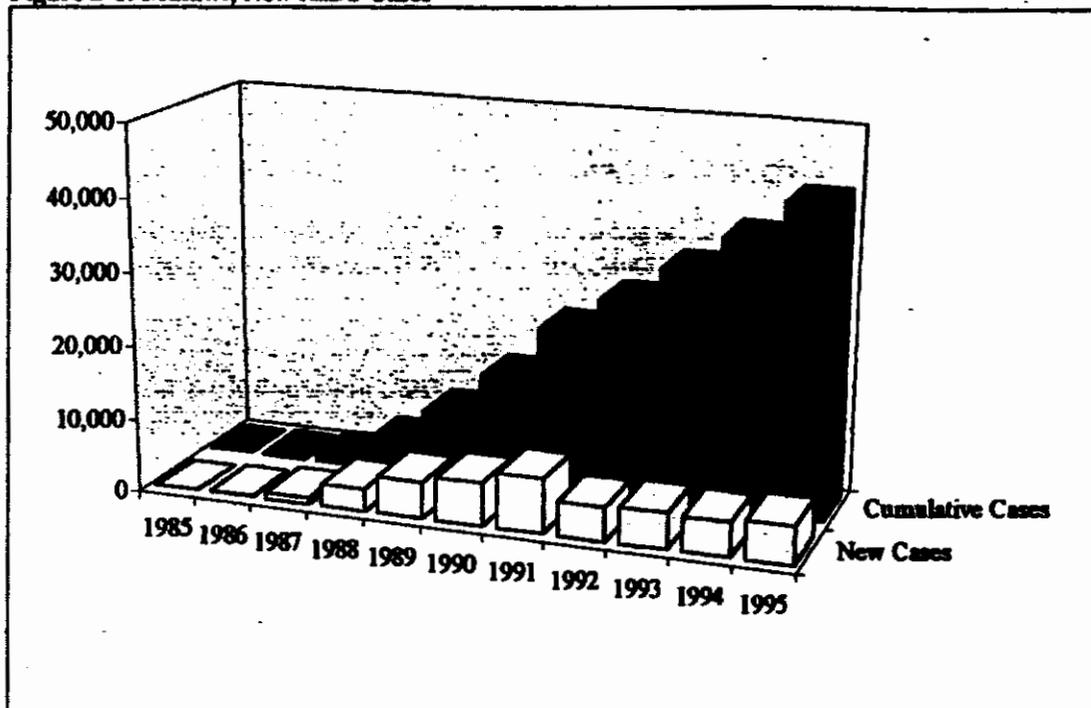
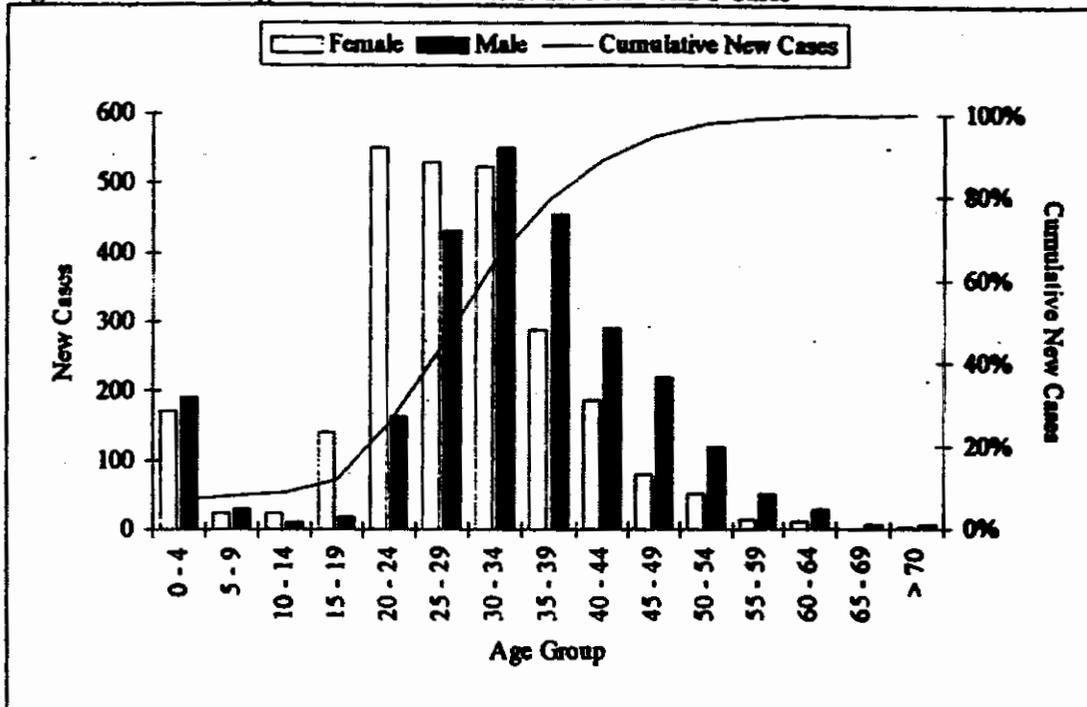


Figure 2-2 shows the age and gender profile of the 1995 new AIDS cases. Over 85% of the 1995 new cases were in the age group 15 to 49. This is the age group which, under normal circumstances, is most economically productive and least expected to be a burden on society in terms of needing medical care.

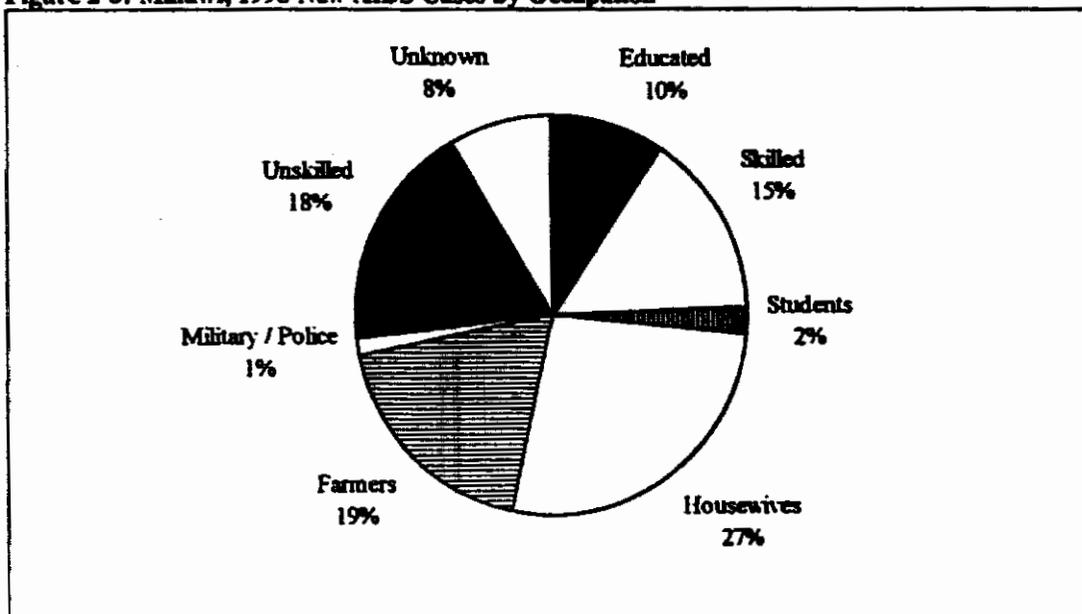
In the age range 15 to 29 years, there are more female than male cases but, from age 30 years onwards, more male than female cases. The total number of new male and female cases are similar. If the incubation period is similar for males and females, this suggests that females are infected at an earlier age than males.

Figure 2-2: Malawi, Age and Gender Profile of 1995 New AIDS Cases



Of the 5,209 new people with AIDS reported in 1995, 1,395 or 27% had been or were being educated or had acquired a skill (see Figure 2-3). In the early 1990s, 4% of the appropriately aged population in Malawi was enrolled in secondary education and only 1% in tertiary education. This suggests that HIV/AIDS is affecting a higher than proportionate number of skilled and educated people in Malawi.

Figure 2-3: Malawi, 1995 New AIDS Cases by Occupation



HIV Prevalence

Table 2-1: Malawi, HIV Prevalence (Urban)

	URBAN		
	Blantyre %	Lilongwe %	Mzuzu %
1985	2.0	-	-
1986	-	-	-
1987	-	-	-
1988	18.6	-	-
1989	18.6	16.4	16.9
1990	21.9	17.9	-
1991	26.0	-	-
1992	27.1	-	-
1993	30.2	-	-
1994	31.8	16.5	21.2
1995	32.7	22.5	18.5

In the absence of national surveys, the most commonly used estimate of HIV prevalence in the reproductive age group is based on women visiting ante-natal clinics. Table 2-1 shows that the rate of HIV prevalence in ante-natal clinics in Blantyre increased dramatically in the late 1980s but appears to be levelling off in the last three years. The statistics relating to Lilongwe and Mzuzu suggest that prevalence in these cities may have peaked at a lower rate.

By averaging the statistics obtained from ante-natal clinics around the country, it has been estimated that HIV prevalence for adults in the reproductive age group in Malawi is 13.8%. Using the national rate of HIV prevalence for the reproductive age group, the distribution by age of AIDS cases reported and the national population distribution by age, it is possible to estimate HIV prevalence for other age groups and the numbers of people currently infected (see Table 2-2).

Table 2-2: Malawi, Number of HIV Infections by Age Group

	Population (in millions)			AIDS Cases 1995	HIV Prevalence 1995	HIV Infections 1995
	1993	1994	1995			
National	11.000	11.341	11.693	5,209	6.63%	775,595
Age Group:						
0-14	5.203	5.364	5.531	463	1.25%	68,938
15-49	4.521	4.661	4.806	4,454	13.80%	663,179
>50	1.276	1.316	1.356	292	3.21%	43,477

2.4 Demographic Effects

Due to the length of the incubation period, AIDS related mortality occurs after the average child bearing age and therefore has little effect on national birth rates. However, by increasing the number of deaths in young adulthood when, for most causes of death, mortality is usually at its lowest, it has a significant effect on life expectancy and national death rates. Nevertheless, it has been estimated that, given the high fertility rates in sub-Saharan Africa, HIV prevalence among the adult population would have to exceed 50% to cause population growth rates to become negative. It has been forecast that, by the year 2010, AIDS related mortality in Malawi will result in the death rate being more than doubled and the rate of population growth halved. The effect of HIV/AIDS on the working population will be to make it progressively younger and less experienced.

3. Labour Force Profile

Table 3-1: Labour Force by Gender at 31 December 1995

	All Sites		
	Male No	Female No	Total No
Administration	150	14	164
Sales	19	1	20
Everglo	150	2	152
Service	64	1	65
Engineering	408	2	410
Total	791	20	811

Table 3-1 shows that the B&C workforce is predominantly male and that over 50% of the workforce are employed in the Engineering Division.

Average employee age is just under 36 (see Figure 3-1).

Figure 3-1: Age Distribution of Labour Force at 31 December 1995

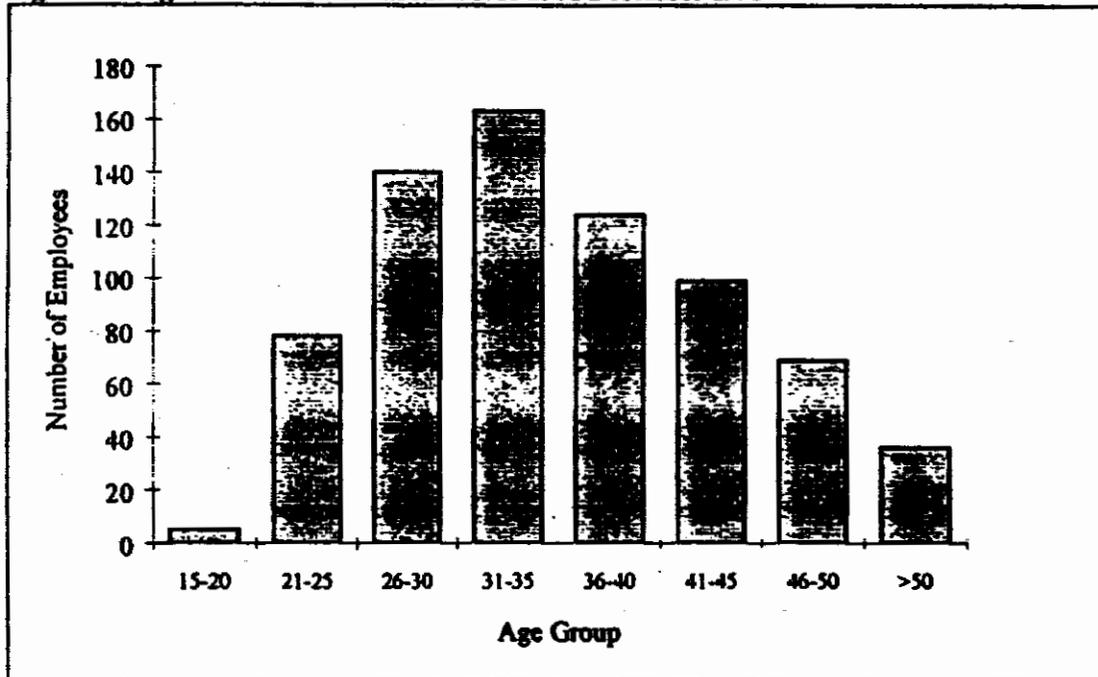


Table 3-2: Labour Force by Location (1991 to 1995)

	1991 No	1992 No	1993 No	1994 No	1995 No
Blantyre	675	676	652	616	617
Lilongwe	161	152	151	153	153
Mzuzu	45	42	41	40	41
Total	881	870	844	809	811

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Table 3-2 shows that Blantyre remains the largest operating site. Despite the classification 'junior' shown in Table 3-3, a large proportion of the B&C workforce are technically skilled.

Table 3-3: Labour Force by Grade at 31 December 1995

				All Sites
	Junior No	Middle No	Senior No	Total No
Administration	134	22	8	164
Sales	13	3	4	20
Everglo	134	15	3	152
Service	56	8	1	65
Engineering	393	14	3	410

4. Employee Welfare

4.1 Medical Care

B&C does not have a staff clinic and does not employ medical personnel.

Senior and middle grade staff are encouraged to join a medical aid scheme managed by The Medical Aid Society of Malawi ('MASM'). B&C contributes 50% of the monthly subscription. In 1995, the monthly subscription was K125.

Details of the scheme provisions are given in Appendix A.

4.2 Pension Scheme

All permanent staff are members of the Brown and Clapperton Group of Companies Pension and Group Life Assurance Scheme. The scheme insurer is Old Mutual.

The major provisions of the scheme comprise:

- life assurance benefit if a member dies in service (equal to twice the member's annual salary);
- death benefit if a member dies in service (determined on a case by case basis by the insurer and based on the scheme value and cumulative member contributions);
- normal retirement pension;
- disability benefit if a member is unable to continue in employment due to disablement (equal to life assurance benefit).

4.3 Leave

Annual leave entitlement varies from 14 to 30 days according to grade.

Sick leave is granted as follows:

- for employees who have been in service for up to one year, two weeks full pay and two weeks half pay;
- for employees who have been in service for up to five years, one month full pay and one month half pay;
- for employees who have been in service for more than five years, three months full pay and three months half pay.

Special leave is granted to employees as follows:

- a maximum of three days for attending the funeral of a father, mother, sister, or brother;
- a maximum of three days for attending the funeral of a wife or child.

5. Effects of HIV/AIDS

5.1 Methodology

Information relating to employee morbidity and mortality was analysed to establish whether evidence could be found to suggest that the effects of HIV/AIDS are already being experienced at B&C. Given the estimates of national HIV prevalence derived from the statistics produced by NACP, it is not unreasonable to assume that such effects will be apparent. However, there has been no validation of HIV prevalence within the B&C workforce and, therefore, the evidence suggests rather than confirms.

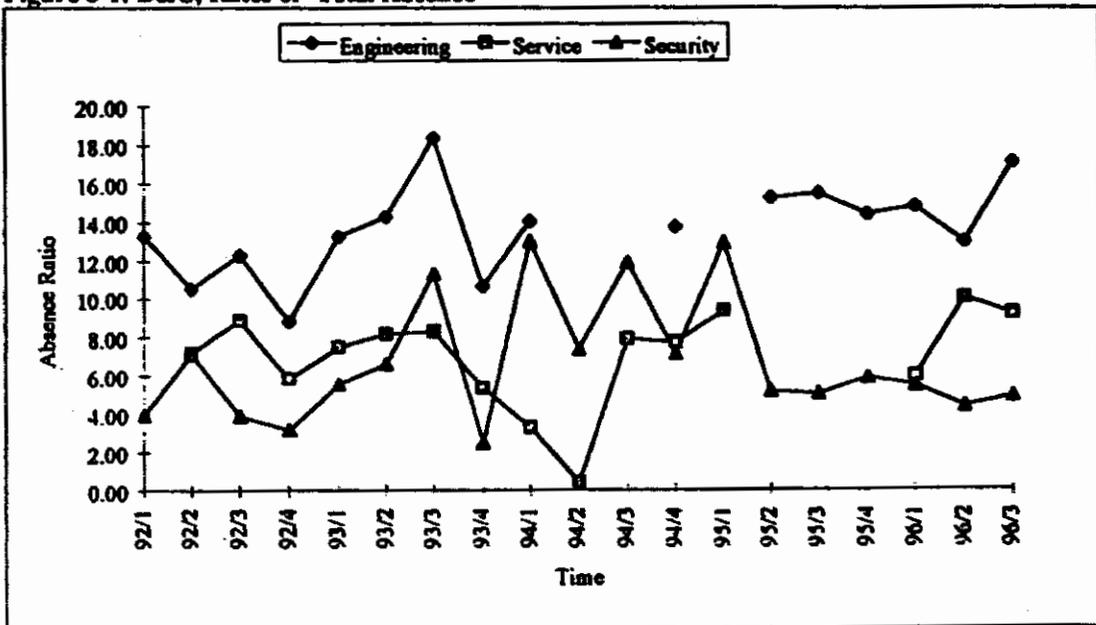
5.2 Morbidity

Absence

Rates of absence have been calculated using attendance sheets obtained from the Personnel Department. Whilst the attendance sheets are reviewed for problematic absence by the Personnel Department, strict analysis is not performed routinely. As a result, some difficulties were experienced in locating a complete set of attendance sheets. Missing attendance information is represented by a break in the lines denoting the change in absence rates in Figures 5-1 to 5-4. Attendance sheets for the period prior to 1992 were in any case not available.

Figure 5-1 shows that rates of absence appear to vary considerably between divisions. Rates of total absence are highest in the Engineering Division.

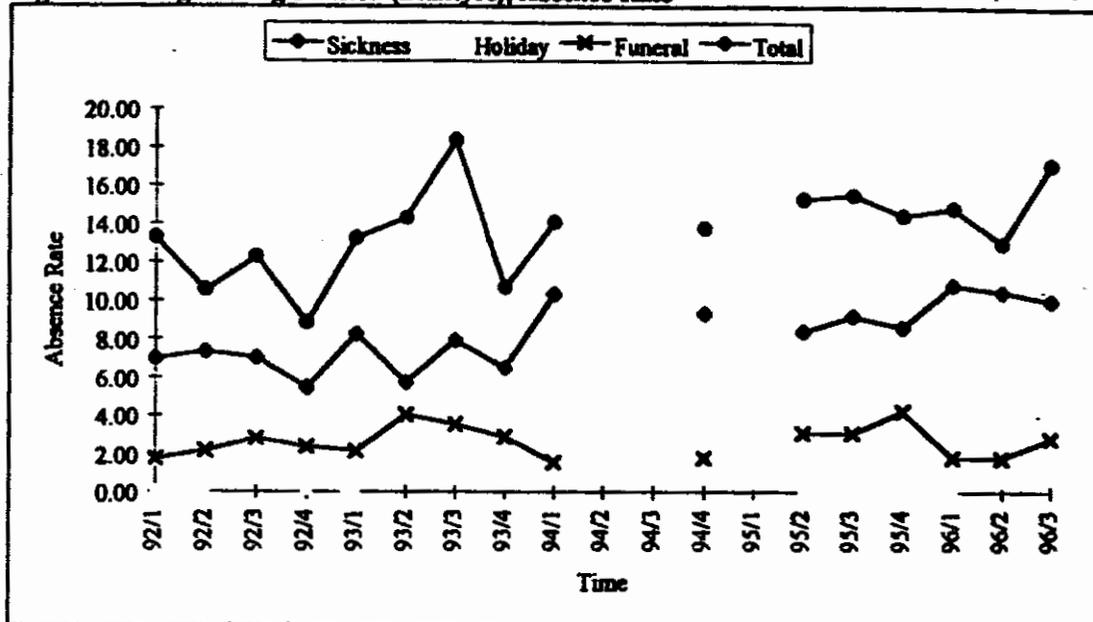
Figure 5-1: B&C, Rates of Total Absence



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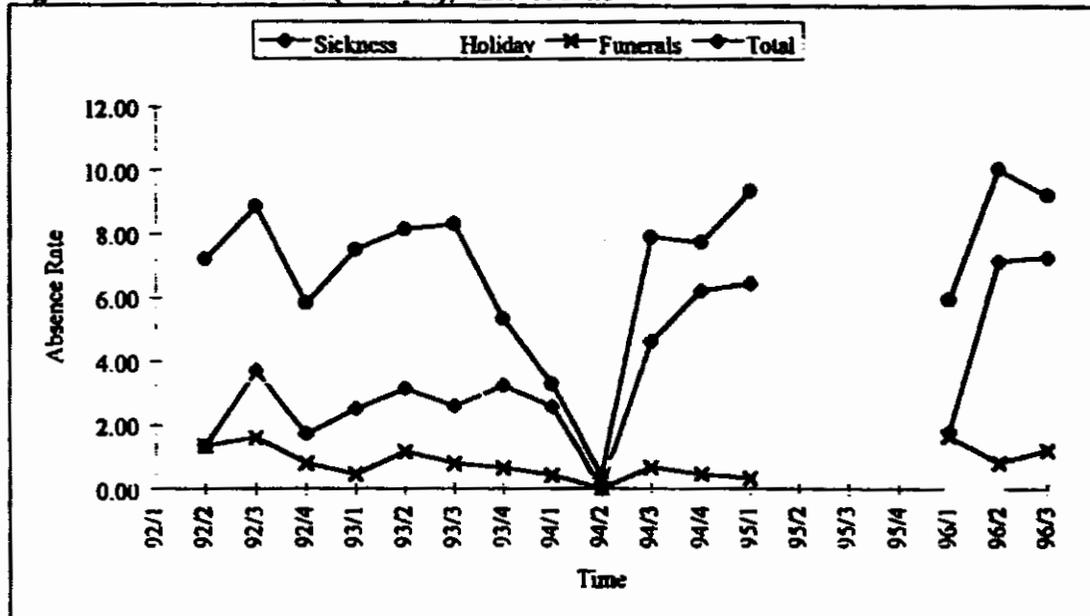
Figures 5-2 to 5-4 analyse absence by cause in the three divisions for which sufficient information was available.

Figure 5-2: Engineering Division (Blantyre), Absence Rate



In the Engineering Division, total absence appears to be increasing gradually over time primarily due to sickness. A significant increase in the rate of absence in the third quarter of 1993 is attributable to the temporary increase in the amount of annual leave taken which coincides with the annual shutdown period.

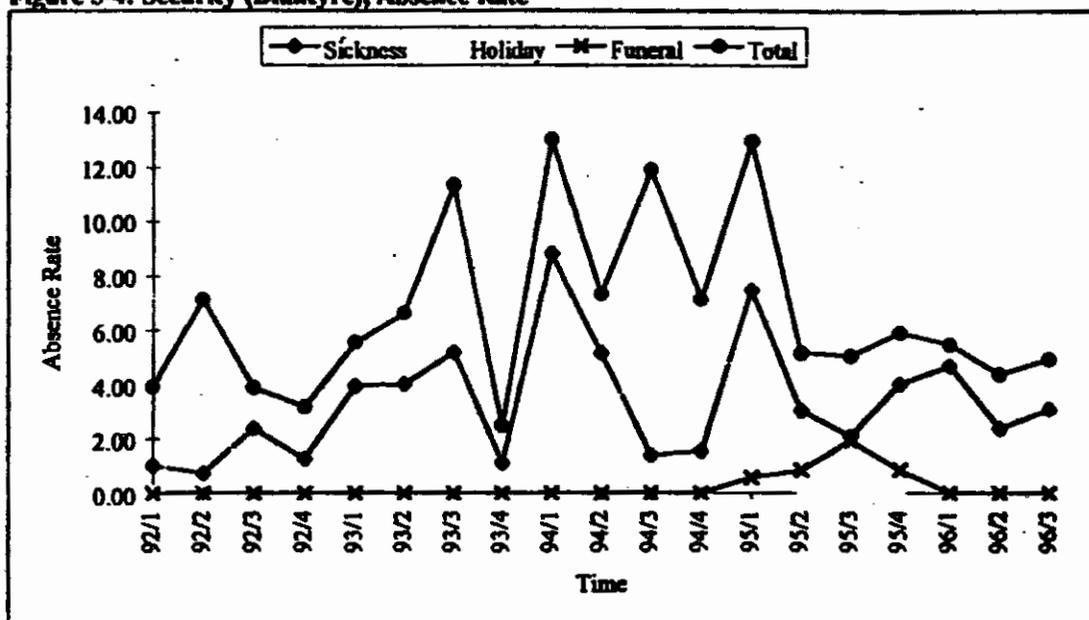
Figure 5-3: Service Division (Blantyre), Absence Rate



In the Service Division, there is a more distinct increasing trend in the rate of sickness absence. However, the effect on total absence has been to some extent negated by a decreasing trend in the rate of annual leave. No explanation was obtained for the significant drop in all types of absence in the second quarter of 1994.

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Figure 5-4: Security (Blantyre), Absence Rate



Absence in the Security Department is more difficult to interpret. The significant drop in the rate of total absence from early 1995 onwards coincides with the commencement of a scheme to train security guards to perform more physically effectively. It has been suggested that guards who were unable to carry out their newly defined duties were released at this time.

The rate of absence due to attendance at funerals is consistently low in all the divisions.

Welfare Costs

Costs relating to employment and employee welfare for the years ended 31 December 1991 and 1995 are compared in Tables 5-1 and 5-2.

It is immediately apparent from these tables that none of the specified employment costs have increased significantly over the period.

Table 5-1: B&C, Comparison of Employment Costs Using 1991 Data in Kwacha

	Costs per Employee					
	Employment		Training & Recruitment		Support Costs	
	1995 K	1991 K	1995 K	1991 K	1995 K	1991 K
Administration	3.962	5.180	150	200	2.610	3.368
Sales	9.600	0	0	0	10.739	0
Service	4.516	3.374	227	84	1.347	805
Engineering	4.154	3.865	54	4	515	1.361
Everglo	4.516	3.671	4	8	1.643	2.110
Total	4.326	4.083	83	56	1.546	1.893
Blantyre	4.333	4.046	100	73	1.672	2.055
Lilongwe	4.407	4.246	28	0	1.168	1.393
Mzuzu	3.934	4.048	2	0	872	1.249
Total	4.326	4.083	83	56	1.546	1.893

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Table 5-2: B&C, Comparison of Employment Costs Using Sterling

	Costs per Employee					
	Employment		Training & Recruitment		Support Costs	
	1995	1991	1995	1991	1995	1991
	£	£	£	£	£	£
Administration	576	1,046	22	40	380	680
Sales	1,397	0	0	0	1,563	0
Service	657	681	33	17	196	163
Engineering	604	781	8	1	75	275
Everlo	657	741	1	2	239	426
Total	5,221	6,956	64	58	2,429	1,544
Blantyre	631	817	15	15	243	415
Lilongwe	641	858	4	0	170	281
Mzuzu	572	818	0	0	127	252

Ill-Health Retirement Rate

In the period from 1991 to 1995, the rate of ill-health retirement increased marginally from 1.47 to 2.47 per thousand employees (see Figure 5-5).

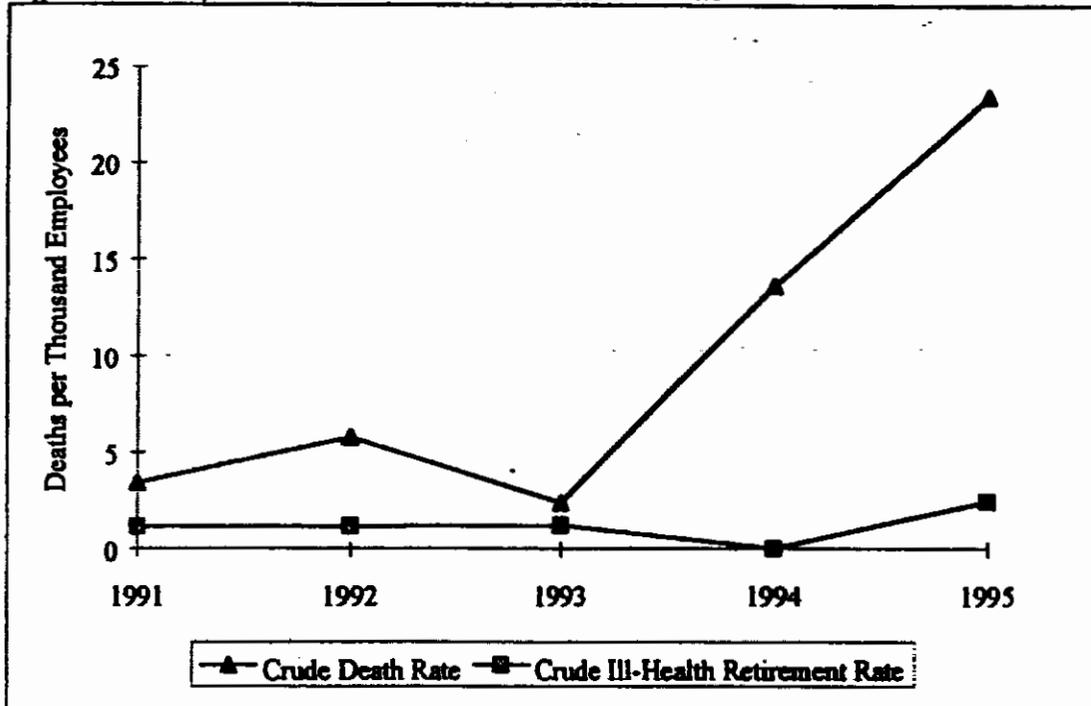
It has been suggested that the rate of ill-health retirement might be to some extent understated as a result of a continuing general acceptance of the employer as provider and the reluctance therefore on the part of the Personnel Department to encourage sick employees to leave B&C employment.

5.3 Mortality

Crude Death Rate

By contrast, mortality has increased dramatically over the same five year period. The crude death rate has increased sixfold from 3.41 to 23.43 per thousand employees.

Figure 5-5: B&C, Crude Death and Ill-Health Retirement Rate



Analysis of 1995 Employee Deaths

Figures 5-6 and 5-7 analyse B&C employee deaths in 1995 by age and by salary (as an indication of skill).

Over 70% of the deceased employees were aged between 36 and 45 and all were male. By equating the 'high' salary earners in Figure 5-7 with 'senior' employees in Table 3-3: Labour Force by Grade at 31 December 1995, 'medium' with 'middle' and 'low' with 'junior', it becomes apparent that a greater than proportional number of senior employees died during the year. Deaths as a percentage of employees was 10.53% for senior, 6.45% for middle and 1.64% for junior staff. However, of the 12 'low' salary deaths, 8 can be classified as skilled employees (ie chargehand, welder, refrigeration technician and mechanic).

This, it has been suggested, is reasonable given that a disposable income gives rise to the possibility of high risk sexual behaviour.

Table 5-3 shows that a greater than proportional number of employees aged between 36 and 45 died during the year. Whilst it is reasonable to assume that older employees are more likely to die than younger employees, the increase in the ratio for the age group 36 to 45 is significant and therefore, it is suggested, related to HIV/AIDS.

Figure 5-6: B&C, 1995 Employee Deaths By Age

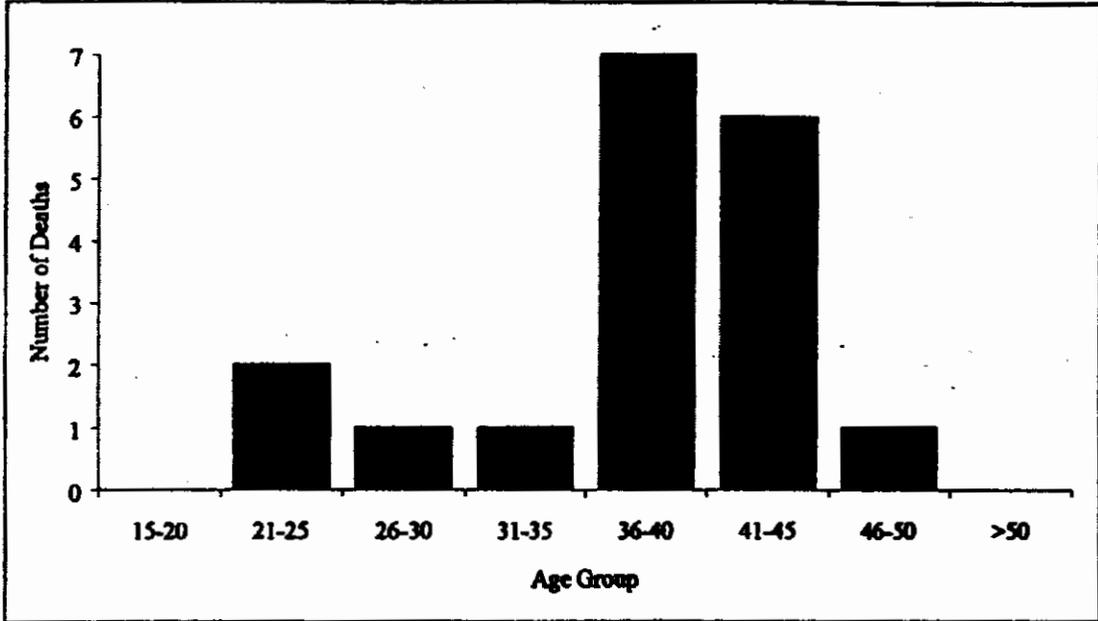
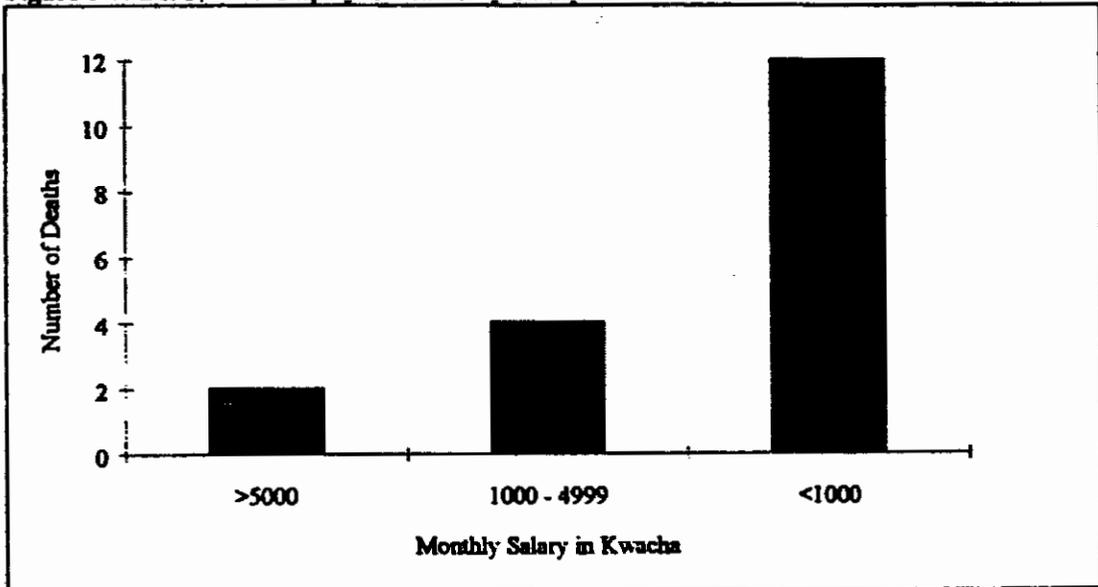


Table 5-3: B&C, Proportion of Deaths By Age

	Age Group								
	16-20	21-25	26-30	31-35	36-40	41-45	46-50	>50	Total
Employees (No)	5	78	140	163	124	99	69	36	714
Deaths (No)	0	2	1	1	7	6	1	0	18
Ratio (%)	0.00	2.56	0.71	0.61	5.65	6.06	1.45	0.00	2.52

Figure 5-7: B&C, 1995 Employee Deaths By Salary



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6. The Cost of HIV/AIDS

Summary

Given the lack of relevant and substantive information, the exercise to quantify the cost of HIV/AIDS to B&C is difficult and somewhat arbitrary. Table 6-1 is a summary of the estimated component costs.

For simplicity, it has been assumed that all funeral costs and all employee absence can be attributed to HIV/AIDS. Moreover, no attempt has been made to quantify the extent of overemployment which, it has been suggested, is practised currently to provide cover for employees who are present in the workplace but under-performing due to sickness.

The cost of HIV/AIDS at B&C for the 12 months ended 31 December 1995 is estimated to be between K360,000 and K1,449,000. This represents between 0.5% and 2.0% of operating turnover and 1.5% and 6.0% of operating profit.

Table 6-1: B&C, Cost of HIV/AIDS

	Low		High	
	K	%	K	%
Funeral Costs	27,519	7.7	27,519	1.9
Absence	331,099	92.3	1,421,279	98.1
Medical Costs	-	-	-	-
Death & Retirement Benefits	-	-	-	-
Training & Recruitment	-	-	-	-
Total	358,618	100.0	1,448,798	100.0

Funeral Costs

Funeral costs have been obtained from the general ledger and analysed by deceased and expenditure type in Table 6-2.

Average funeral costs per employee are calculated to be just over K1,000 and per dependant K430.

Table 6-2: B&C, Funeral Costs in the 12 Months to 31 December 1995

	Employee K	Dependant K	Total K	Coffin K	Transport K	Other K	Total K
Engineering	10,999	7,590	18,589	10,110	8,444	35	18,589
Everglo	5,689	610	6,299	960	5,334	5	6,299
Service	455	2,176	2,631	2,176	450	5	2,631
Total	17,143	10,376	27,519	13,246	14,228	45	27,519
Blantyre	13,012	8,150	21,162	10,630	10,497	35	21,162
Lilongwe	4,131	2,226	6,357	2,616	3,731	10	6,357
Mzuzu	-	-	-	-	-	-	-
Total	17,143	10,376	27,519	13,246	14,228	45	27,519

Absence

The cost to B&C of employee absence has been calculated using two methods (see Table 6-3).

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The low estimate uses labour value added or 'attributable profit' (ie that part of 1995 operating profit that can be attributed to the supply of labour) and, where available, the actual rate of absence recorded by division. The high estimate is based on actual employment costs for 1995 (ie salary, pension, commission, overtime and bonus) and the actual rate of absence. For simplicity, no account is taken of entitlement to less than 100% sick pay.

Table 6-3: B&C, Cost of Absence

	Absence Rate %	Operating Profit K'000	Attributable Profit K'000	Cost of Absence K	Employment Costs K'000	Cost of Absence K
Administration	7.2	-	-	-	2,843	205,725
Sales	10.6	9,809	287	30,229	716	75,561
Service	9.4	1,134	236	22,076	882	82,542
Engineering	15.1	6,541	1,326	199,718	5,830	878,013
Everelo	10.6	7,471	749	79,076	1,701	179,437
Total		25,355	2,398	331,109	11,972	1,321,278

Medical Costs

The cost of providing for employee medical treatment at B&C is fixed by MASM terms and conditions regardless of the extent of employee morbidity.

Death and Retirement Benefits

Similarly, the cost to B&C of providing for employee death and retirement benefits is fixed by the terms and conditions of the pension scheme managed and administered by Old Mutual regardless of the extent of employee morbidity and mortality.

Training And Recruitment

Training and recruitment costs appear not to have increased substantially over the period 1991 to 1995.

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7. Issues

7.1 Current Rates of Employee HIV Prevalence

The cost to B&C of HIV/AIDS in the 12 months to 31 December 1995 is based on estimates of the cost of employee absence and funeral arrangements which, it is suggested, are attributable to HIV infection in the previous five to ten years. Table 2-1 on page 6 shows that the estimated rate of HIV prevalence in urban Blantyre in 1985 was 2%.

Table 7-1 gives an indication of the parameters of HIV infection which are possible within the B&C workforce at present. The low estimate of 112 employees is based on the estimated national average rate of HIV prevalence in 1995 and the higher estimate of 244 employees on the estimated urban rates of prevalence in the same year.

Table 7-1: B&C, Estimated HIV Prevalence Amongst Employees

	Staff No	Average Prevalence %	Positive No	Urban Prevalence %	Positive No
Blantyre	617	13.8	85	32.7	202
Lilongwe	153	13.8	21	22.5	34
Mzuzu	41	13.8	6	18.5	8
Total	811		112		244

It is suggested that the business cost of HIV/AIDS, measured in terms of the percentage of total expenditure or operating profit, will therefore continue to increase in the short to medium term.

7.2 Training and Recruitment

The business activities of B&C require a constant and consistent supply of skilled labour. Whilst training and recruitment costs have not changed significantly over the past five years, it is suggested that the maintenance of the skills base will become increasingly problematic with the cumulative loss of employees with both technical expertise and both practical and managerial experience. It is already apparent at B&C that the rate of loss of senior staff is higher than that of junior staff.

If public education resources fail to replenish sufficiently the pool of skilled labour, industry will be increasingly required to incur the costs of training to ensure continued production. Moreover, as the national supply of skilled people is depleted, it will become progressively more expensive and eventually no longer possible to recruit nationally. Failure to meet production targets leads to customer dissatisfaction and the potential loss of markets.

8. Conclusion

HIV/AIDS related expenditure in the 12 month period to 31 December 1995 is estimated to have been between K360,000 and K1,449,000. This represents between 0.5% and 2.0% of operating turnover and 1.5% and 6.0% of operating profit for the period. In terms of operating profit, the effects of HIV infection and AIDS related mortality might be interpreted as negligible; in terms of profit after overheads and tax, they are significant. Moreover, these costs far exceed the costs of a comprehensive education and prevention programme.

The major component of the cost to B&C of HIV/AIDS is employee absence and its effect on productivity. For the purposes of this study absence, or reduced productivity, has been valued on the basis of 'labour value added' to give a low estimate and labour costs to give a high estimate. It is suggested that the true cost of absence will lie somewhere between these estimates.

The direct costs to B&C of employee morbidity and mortality are constrained by the employee welfare benefits offered. Medical provision is offered, to senior and middle grade staff only, via membership of an independently managed medical aid scheme. The company pension scheme is contracted out. Employer contributions to both schemes are periodically fixed and do not vary with employee sickness or death.

The issues raised by this study are twofold. Whilst the estimate of cost is at present low, the numbers of current employees who are, potentially, HIV infected suggests that costs will escalate in future years and corporate decision-making with respect to employee health might be more sensibly based on forecast rather than actual business cost. Moreover, as the epidemic advances and the national skills base decreases, recruitment and training will become an additional and significant component in the the business cost of HIV/AIDS.

The Medical Aid Society of Malawi

The MASM General Scheme offers the following benefits within Malawi:

- unlimited consultation at a nominated general practitioner or any other medical institution;
- 100% of the cost of assessment by a specialist;
- 80% of the cost of prescription drugs (except for AZT drugs and drugs for diabetes, epilepsy and hypertension) purchased at pharmacies;
- 100% of admission and treatment costs in Government and mission hospitals;
- 100% of maternity delivery costs in Government and mission hospitals;
- 80% of admission and treatment costs in private hospitals;
- 60% of maternity delivery costs in private hospitals;
- 50% of the cost of outpatient consultation and treatment in private hospitals;
- 100% of laboratory and x-ray fees;
- 80% of the cost of ambulance services between hospitals in the same locality;
- preventive dentistry;
- optician refraction costs.