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Rural–Urban Health Care Service Imbalances in Zambia — Forces and Outcomes

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ABSTRACT

The central argument of this paper is that health care delivery systems, like any other social institution, are shaped by various forces relating to their respective societal context. Essentially, therefore, imbalances can be explained through historical, cultural, social, economic and political forces. In this paper only historical circumstances, prevailing ideology, power and income distribution are considered. These forces vary from country to country in terms of their nature and impact on the health care system. The discussion assumes that rural–urban disparities in the modern health care services in Zambia occur as a logical outcome of a historical process in relation to the forces referred to. A consideration of the introduction of allopathic medicine in Zambia by missionaries, and the impact of the mining industry and the government on the distribution of health care services, is, therefore, of critical importance.

Introduction

The purpose of this paper will be to document and examine the health care delivery system in Zambia in terms of the forces and outcomes that have led to distributional differences, and the extent of the imbalances between rural and urban areas.

According to Gil (1981) the allocation of resources is based upon certain choices. Gil further explains that the generation and distribution of provision among humans living in groups always involves socially structured and sanctioned processes. It is therefore important to understand what the dominant interests are, in relation to prevailing power relations and ideology, with respect to rural–urban resource allocation, particularly health care services. Ideology, here, refers to the political beliefs and concepts that govern socio-political choices. By implication, then, ideology serves (consciously and unconsciously) the dominant interests. Dixon and Navarro (1984) suggest that the rules and priorities pertaining to the distribution of resources among competing needs are dominated by the ideology within a

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given political framework. It should be acknowledged here that those with power define and impose their own choices as regards the distribution of resources, eg the type of health care system in a given society. The lop-sided development experience of health care services in Zambia, like elsewhere, can be explained with reference to colonial ideological bias, and economic and religious interests. Chagula and Tarimo (1975), Gish (1978), Hampson (1982), Ramasubban, Doyal and Pennel (1979), and Macpherson (1982), demonstrate the existence of similar patterns of biased health development in Tanzania, Zimbabwe, India, East Africa and Papua New Guinea respectively. They have unanimously argued that the essential objective of colonial health policy was to provide a safer environment for the Europeans, to maintain a healthy labour force engaged in industrial and commercial activities, and for conversion of the natives to Christianity in the colonial territories. In other words, health care was provided only in so far is it could yield economic or other special advantages for the colonialists, international capitalists and religious bodies. Furthermore, available evidence shows that health care provision according to colonial policies and practices was strictly colour-segregated. Consequently, Zambia's population was divided into Europeans, Asians (who came into the country as traders and shop-owners) and coloureds (off-spring of black and white unions), and Africans, in that order of importance (Northern Rhodesia, 1946).

It should also be noted that, from the time of colonisation until shortly after independence, copper (essential to the country's economy), and other minerals like zinc and cobalt, have been privately owned, exploited and controlled by foreign mining companies (Fortman, 1969). For the country it meant that the private foreign investors held the power to control and direct savings, consumption, investment and, above all, the allocation of resources. In other words, the decision making process in relation to the distribution of economic resources was foreign, ie in the hands of international capitalists. With the prospects of quick profits and capital accumulation as the reason for investment, foreign investors naturally sought to aid only those areas in which they could expect rapid returns on the investments.

Ideology and power are therefore of considerable importance in setting priorities and achieveing an equitable health care system. The questions of where, how much, and what amounts of resources are to be used for health, and who the beneficiaries should be, are all ideologically and economically motivated. Those nations that have succeeded in providing relatively balanced health care services have not asked "how many people can the system provide health for?" but rather "given the resources we have how should they be applied to provide health care to all?".

Besides ideology and power, imbalances in health are affected by the type of economy in a country. Gray (1982) makes an attempt to distinguish

between capitalist and socialist economies and how they may affect the distribution of resources and, ultimately, equity. In general terms, socialist economies such as China and Cuba advocate government ownership and control of the means of production, the redistribution of resources and the promotion of individual as well as general welfare. This includes the provision of health care services for all, based on the assumption of egalitarianism and that health is a right for all. In such economies health care services are available and and accessible to a large part of the population, either as a free service or heavily subsidised and therefore available at a low cost (Elling, 1980). This contrasts with the free-market enterprise system such as that of the United States of America. Wealth and resources in such an economy are largely privately owned and this has led to sharp inequalities when contrasted with socialist economies. Health is seen as a commodity to be purchased. Public support for health care services is relatively less. Private payment plays a greater role, in the form of insurance, in these economies. Consequently, a smaller share of the Gross National Product is devoted to health services in the United States than in China (Lindblom, 1977).

The basic argument, here, is that the availability of more resources alone will not achieve an equitable distribution of health care services. As noted by Turshen (1984), a distinction needs to be made between (a) the ability to generate or mobilise resources and (b) the actual will to distribute the same resources among individuals, communities and regions equitably, especially between rural and urban areas. It is therefore suggested that the availability of financial resources does not mean that health care services in both rural and urban areas will receive equitable provision. This can be seen particularly in the Zambian Health Care Service where the urban areas, as will be demonstrated, have received and continue to receive, more resources than the rural areas.

Historically, modern health care services were introduced into Zambia during the late 19th century with the advent of the missionaries (Gann, 1964). David Livingstone and other European missionaries came to the area with the first mission being established by Francois Collard in 1855 at Sesheke in Barotseland, now the Western Province of Zambia. Initially health service were provided on a very small scale and often limited to converts or potential converts. Medical services were employed as a means to convert the 'African pagan masses'. This view is supported by Rotberg (1972) when he indicates that "Africans were thus attracted to their station — if only to enhance the appeal of a worldly web". But gradually the health care services, which were curative in nature, became one of the major secular contributions of the missionaries. They knew how to bandage wounds, to drain sores, to set bones and to nurse patients. They alleviated pain and healed the sick. However, it should be mentioned that these missionary activities were only found in few parts of the country leaving many other

parts of the country without services. But, by and large, missionaries have and continue to offer health services in rural areas.

In 1899 the Northern-Western Council proclaimed the territory north of the Zambezi river to be directly under British Colonial Administration. Later in 1924, the British South African Company (BSAC) completely handed over the administration of Northern Rhodesia to the British Government Colonial Office, while retaining full rights over minerals in the country. Administrative centres were established with modern health care services to cater for the expatriate colonial officers. The indigenous workers at these centres also received, separately, the services from the white expatriates, to create a buffer zone in disease transmission. Again, these administrative centres, which existed at district and provincial levels, did not adequately cover the country. In fact they were dotted, for administrative convenience, throughout the country. However, the coming of the railway line in 1902 and the introduction of the mining industry on the Copperbrlt in 1906 (Republic of Zambia, 1980) had created a new dimension to the provision of health care services. It is being argued here that the essential objective of providing health services in colonial Zambia was to provide a safer environment for the white expatriate population, and to maintain a healthy labour force for the industrial and commercial activities in the colony. It seems that services like education were also extended only to local workers where they could yield economic, political or other special benefits for the colonial power or other international capitalists. For example, Fry (1979) writes that:

> "the mining industries in Zambia realised that the efficiency of African labour could be increased substantially by improving health condition services of the workers by means of innoculations, good sanitation, clean water, good housing, nutrition and environment."

One could, therefore, suggest that, since the rural areas did not offer lucrative, easily exploitable economic benefits to investors as well as the colonial government, they did not have any great incentive to provide adequate health care services in these areas. Instead the investors, together with the colonial government, invested more in the Copperbelt and along the railway line. It is not an accident, therefore, that the most developed areas in Zambia to-day are the metal-producing areas centred on the old railroad. As a consequence, rural areas have been comparatively neglected.

Also, during this stage of development, the newly introduced money economy created new needs and wants which could only be met with cash. However, economic investment was skewed towards the urban areas, and so migratory wage labour became even more necessary as a way to meet these new needs. But more importantly, this development created disparities in the incomes of households in rural and urban areas. Several studies have

suggested that rural household incomes are much lower than the incomes of households in urban areas.

It seems clear, therefore, that two major factors tend to emerge as being largely responsible for imbalances in the provision of health services. These are: (a) a pattern of skewed urban investment and (b) lack of adequate government intervention to equitably allocate resources. This gap between rural and urban areas continues to grow ever wider.

The extent of the imbalance (1964–1984)

Experts on health care provision in developing countries appear unanimous in suggesting that the major problem facing these countries, including Zambia, is not merely inadequate numbers of health personnel or facilities in relation to the population, but the great disparities between rural and urban areas. To examine the extent of this imbalance in Zambia, the following discussion will focus on resource allocation in the health sector in relation to rural and urban areas. This will be done by using official data on health resource distribution in Zambia. Resource inputs will be looked at in terms of the allocation of expenditure and the distribution of personnel and health provision in rural and urban areas. If, as is being argued here, resources are inequitably distributed between rural and urban areas, then services, and the results of measures of availability, accessibility and outcomes will be unequal between rural and urban areas. However, because of the difficulty of measuring health outputs, or outcomes that are a direct result of these resource inputs, quantitive distributions of inputs, as the best available indicators of health output, will be looked at. (The reader is reminded that it is extremely difficult to state entirely accurately how much any particular country spends on health provision.)

In the post independence era, the government sought to redefine the basic values which would lead to a national health care system that is accessible, universal and affordable. These values were determined by the philosophy of 'humanism'. Although Humanism in Zambia has been used as a guide to policy implementation, many observers doubt its effectiveness or impact on health care and other sectors of life in the country. However, Humanism is used here to aid the reader appreciate the principles that govern the allocation and distribution of resources in Zambia. Health care provision was seen as important as the physical well-being of individuals is seen to be a critical influence on their capacity to contribute to and benefit from socio-economic development. This spirit is reflected in all National Development Plans and is summarised in the overall objectives of the National Health Policy (Govt of the Republic of Zambia, 1979):

> "To improve and expand health services; cover all areas in the Republic and in doing so, continue to make the health service efficient and readily available to all people."

The government has continued to expand health care services in the country. Substantial investments (Ministry of Health, Zambia, 1981) have been made since independence to make health care available to all, as can be seen in Table 1.

Table 1

Health Care Facilities (1964 and 1978)

Facility	1964	1978	% Increase
Hospitals	48	82	70,8
Beds and Cots	7 710	14 700	90,6
Total Health Centres	306	676	120,9

Source: Country Health Profile, 1981, p. 16

The idea was to provide as many modern health institutions as possible. These were to be equipped with high technology and supported by highly trained staff even at health centres. According to the Family Health Care Report (1979) the government's expenditure on health (recurrent and capital) rose from US$44,4 million to US$65,5 million (47,3 percent) or from US$10,9 to US$12,73 (16,7 percent) per capita between 1972 and 1976. Total health expenditure, including recurrent and capital, for government, missions and mines, however, rose by only 5,7 percent from US$87,5 million to US$92,5 million during the same period. However, these improvements in the health expenditure of Zambia are largely reflected in improvements in urban areas. The rural population appears to continue to be by-passed and their health status largely remains unaffected. The crucial question that needs to be investigated, therefore, is how the health care investment has been disbursed across the nation.

In the FNDP, as presented in Table 2, government's health expenditure suggested a bias in favour of urban areas. The government spent K10 499 000 or 58 per cent on one third of the population living in urban areas. This contrasts with K7 624 000 or 42 per cent for the remaining rural-based two-thirds of the inhabitants. In the Second National Development Plan (SNDP) this bias in spending favourable to urban areas did not seem to change, as Tables 3, 4 and 5 reveal. Based on this evidence it may not be presumptuous to indicate that the presence of the three large hospitals in the three largest towns is no accident, but a deliberate decision by those in power against the alternative decision to build smaller hospitals throughout

the country. In addition to making health care available and accessible to the majority of people through smaller hospitals, this approach would not only correct the imbalances but decentralise the country's health care system. This inability to alter the imbalance is said to have been caused by the influence of the political and bureaucratic elite and organised urban labour. These groups control the decision-making process and exert pressure on the government (ILO, 1977). It is also argued that these groups control both political and economic power, and therefore have the decision-making power over the distribution of resources. Conversely,rural people tend to lack both political and economic power, and therefore one cannot control and decide upon the allocation of resources. Unlike the urban population, rural people, despite having common problems, remain unorganised and fragmented and thus without an effective voice. They are not seen as posing any danger to the system. Observers such as Bates (1970) and Rothchild (1972) view this power imbalance as one of the major contributors to the rural-urban gap.

Table 2

National Summary of Government Capital Investment by Province on Health — 1966
(in Kwacha)

Province	Amount	Percentage
Copperbelt	4 214,8	23,3
Central	4 677,7	25,8
Southern	1 607,4	8,9
Total (Urban)	10 499,9	58,0
Northern	2 674,0	14,8
Eastern	1 737,4	9,6
Western	1 016,6	5,6
Luapula	1 707,4	9,4
North-Western	488,8	2,7
Total (Rural)	7 624,2	42,1
Grand total	18 124,1	100,0

Source: First National Development Plan (FNDP) 1966–1970: p 81.

Table 8

Recurrent and Capital Budgets
(Approved Estimates for some Institutions)
(in Kwacha)

INSTITUTION	1974 Recurrent	% [1]	1974 Capital	%	1978 Recurrent	%	1978 Capital	%	1979 Recurrent	%	1979 Capital	%
1. Province	11 856 642	37,3	1 521 031	43,8	20 758 650	41,1	1 668 000	49,5	21 256 700	38,4	827 000	36,6
2. UTH	5 735 995	18,1	992 052	28,5	8 734 750	17,3	1 019 000	30,2	10 182 380	18,4	485 000	21,4
3. Ndola Central Hospital	2 258 807	7,1	18 564	0,5	3 985 710	7,8	200 000	5,9	4 418 310	8,0	195 000	8,6
4. Kitwe Central Hospital	1 899 230	6,0	—	—	3 167 950	6,3	—	—	3 305 480	5,9	—	—
5. Headquarters	8 011 893	25,2	916 852	26,4	10 481 151	20,7	485 000	14,4	12 595 751	22,7	755 000	33,4
6. Other	2 001 215	6,3	26 580	0,8	3 477 110	6,8	—	—	3 660 080	6,6	—	—
Total Health Budget	31 758 322	100	3 475 079	100	50 555 321	100	3 372 000	100	55 418 651	100	2 262 000	100
Total All Zambia Budget	440 928 814		158 271 620		652 782 747		139 996 900		725 508 616		123 906 000	

Source: Adapted from Republic of Zambia, Ministry of Health, Country Health Profile 1978, Planning Unit, Ministry of Health, Lusaka, p 32.
[1] Percentage in relation to the Total Health Budget of Zambia.

The actual expenditures cited in Table 3 are not sufficiently specific to render an easy rural-urban comparison. But it is evident that the three central hospitals, viz UTH, Ndola and Kitwe (all urban-based), out of thirty-nine (39) hospitals in the country, spent K9 888 582 or 31,1 per cent of recurrent expenditure and K1 010 616 or 29 per cent of capital expenditure in 1974. Similarly in 1978, the same three hospitals, now out of forty-two (42) in the country, spent K15 888 410 or 31,3 per cent of the recurrent expenditure and K1 219 000 or 36,2 per cent of the capital expenditure. Likewise, K17 906 120 or 32,3 per cent of the recurrent and K680 000 or 30 per cent of total capital health expenditure was spent on the three hospitals in 1979. It is apparent therefore that the three urban hospitals account for a larger proportion of the total health budget. Notably, the UTH had the largest share of the total budget during the period under consideration. This share is expected to grow even bigger as a newly built children's wing (donated by Japan) has been opened.

Provinces represent provincial and district hospitals and health centres in both rural and urban areas. But more and larger hospitals are found in the urban areas. It is interesting to note that of the total recurrent budget in 1974 only 37,3 per cent was allocated for the activities in the provinces, districts and rural areas. Similarly in 1978 with 41,1 per cent and in 1979 with 38,4 per cent. Capital expenditure figures are not significantly different to this. For example, in 1978 while the UTH alone was allocated 30,2 per cent of the total health capital expenditure, provinces were allocated only 49,5 per cent. This allocation of health funds to rural and urban services could be both the cause and effect of structural health imbalances, perpetuating and reinforcing the existing disparities.

Availability of health facilities

In the data presented in Table 4 both personnel and facilities appear to be concentrated in urban areas. For example, King (in Family Health Care Reports, 1979) contends that in Kenya the overall doctor-patient ratio is 1:10 000 but in rural areas the ratio rises as high as 1:50 000. He goes on to say that the situation is said to be even worse in Nigeria where although the overall doctor-population ratio is 1:33 000 the ratio in the Northern rural part of the country was been reported as being as high as 1:140 000. Similarly in Zambia, while the overall doctor–population ratio in 1978 (Table 5) was approximately 1:8 700 that of urban areas was 1:4 000 with rural areas at 1:38 000. A cursory examination of Tables 4 and 5 reveal considerable imbalances in the availability of health facilities and personnel between rural and urban areas in Zambia.

Both Tables 4 and 5 demonstrate that there are far more health facilities and personnel in urban areas than in rural areas. According to the ILO Report (1981:104):

"In 1972 about one-fourth of the total population did not have access to any type of health facilities within 15 kms; in some worse-off provinces, predominantly rural areas, the proportion was one-third."

On the other hand, the Report continues, coverage in the Copperbelt was more than 90 per cent. This has since improved, but the gap does not seem to have significantly narrowed over time, as can be observed in Tables 4 and 5.

In 1977, 59 per cent of the population lived within a 30 km radius of existing hospitals and 41 per cent outside it (see Table 4). This situation, as seen in the table, is comparatively worse in the predominantly rural provinces such as the Northern Province where 70 per cent of the

Table 4

Availability of Health Facilities* in 1977

Province	Population per doctor (thousand)	Beds and Cots per 100 people	Percentage Population within 30 Kms radius of existing hospitals	Percentage of Rural Population 12 Kms from existing health centres
Central	15,2	2,9	66,8[a]	59[a]
Copperbelt	5,8	3,0	97,6	83
Lusaka	3,0	3,5	—	—
Southern	14,5	3,0	51,4	75
Eastern	29,6	2,4	48,2	84
Luapula	23,6	2,2	34,9	78
Northern	24,8	1,9	29,1	52
North-Western	15,5	4,4	50,6	65
Western	20,4	2,7	46,0	53
National Average	8,9	2,3	59,0	68

Source: International Labour Office, Zambia, Basic Needs in an Economy Under Pressure, Jobs and Skills Programme for Africa, Addis Ababa, 1981, p 104.

Note: (a) including Lusaka

*Excludes Army hospitals and private surgeries.

population live outside the 30 km radius. This is in contrast to 2,4 per cent of the population in the Copperbelt Province who live outside of the 30 km radius. Differences also exist in the distribution of beds and cots between rural and urban areas. The data indicates that while the number of beds and cots is above the national average in urban areas, some provinces (such as Northern) are well below the national average. It would seem clear then that the rural population has less access to health facilities than the urban population.

The distance patients have to cover to reach a health facility is a major factor in defining the accessibility and availability of health care. This situation is further compounded by the under development of communication systems in rural areas. In Zambia, as in many less industrialised countries, problems of transportation in getting to and from hospitals or health centres are often worse in rural areas than in urban areas. Even the use of mobile clinics is not always feasible, especially during the rainy season when tropical rains sometimes wash away roads making them impassable, because of problems of maintenance and fuel. For example, in 1980, out of the total of 576 Ministry of Health vehicles only 23 vehicles or 21 per cent were in running condition. Three hundred and eighty vehicles or 66 per cent, were out of service and needed repair, and 73 vehicles or 13 per cent were beyond repair (Family Health Care Report, 1979). Simply stated, apart from the flying-doctor service which operates only in certain areas, an ambulance service in predominantly rural areas does not exist. It is not uncommon therefore for patients to be brought to hospital or health centres on bicycles, blankets or on relatives' backs. Even if bus services were frequently available, a majority of the rural population would still be unable to reach health services. They lack adequate disposable income for transportation (Ollawa, 1979).

In brief, in terms of both expenditure and the provision of health facilities, the urban areas (with one-third of the population) have enjoyed far more resources than the rural areas (with two-thirds of the population). The UNICEF Report (1979) states that "there has been dramatic growth in cosmopolitan health facilities since independence. The numbers of government urban clinics excluding mine clinics have risen by more than 202 per cent".

Distribution of health personnel

The imbalances in medical services between rural and urban areas is compounded by a lack of adequate and suitable personnel in rural areas. The data presented in Table 5 suggests that, except for medical assistants, there are more health personnel in predominantly urban than rural areas. The Medical Assistants' figures must be interpreted with caution and within a historical context. This cadre of medical workers were established, during

Table 5

Health Personnel* in Zambia — 1978
(Government, Missions and Mines)

Province		Doctors	Dentists	Registered/** Registered Mid-Wives Nurses	Zambia Enrolled Nurses/Zambia Enrolled Midwives Nurses	Medical Assistants
Central		41	1	77	214	73
Copperbelt		219	14	632	1 406	220
Lusaka		244	8	351	436	76
Southern		37	3	95	315	94
	Total Urban	541	26	1 155	2 371	463
	Ratio Urban	1:3 979	1:82 807	1:1 864	1:908	1:4 650
	Percentage of the Total	86	90	78	78	47
Eastern		28	1	58	134	158
Luapula		12	—	48	107	91
Northern		21	1	88	167	105
North-Western		11	—	79	120	90
Western		21	1	64	124	90
	Total Rural	88	3	327	652	529
	Ratio Rural	1:37 715	1:1 106 333	1:10 149	1:5 090	1:6 274
	Percentage of the Total	14	10	22	22	53
All Zambia:		629	29	1 482	3 023	992
National Ratio		1:8 699	1 188 689	1:3 692	1:1 810	1:5 516

Source: Republic of Zambia, Ministry of Health, Country Health Profile, 1982 and 1978 Population Estimates, Population Census 1980.

*Excludes private and Army and traditional health personnel. It also excludes other non-medical and paramedical workers in Zambia.

**This category includes matrons and sisters. Although these are supervisory staff, they are considered to possess similar qualifications and skills and perform the same functions.

the colonial era, primarily for rural areas. They were trained to run rural clinics. At that time it was not usual to find doctors, other than missionaries, in rural areas. So the tendency was to send the medical assistants to rural areas after training. The marked service imbalance for other categories of personnel is sometimes attributed to an unwillingness on the part of most medical personnel to work in remote areas where the need is greatest. Theorists, such as Lipton (1977), point to the lack of incentives and the unattractive social conditions in rural areas. The general tendency even among Zambian-trained health personnel, including doctors, is to work in urban centres. These are places where conditions of life are relatively attractive.

Analysis of Table 5 reveals that Zambia-enrolled nurses (ZENs) together with Zambia-enrolled midwives (ZEMs) form the largest health personnel contingent (2 023) nationally). This is the lowest level of formally trained medical personnel in Zambia. They usually work under the supervision of medical assistants. Candidates in this group must hold a form three (Junior High) or Junior Secondary School Certificate or its equivalent. They undergo a two-year medical training with further training for the midwives. This group, in the author's opinion, currently form the backbone of the primary health care services with other personnel in lower cadres of social services in Zambia, especially in rural areas. However, despite their critical and essential nature, there are not enough of them in rural areas. While the national population ratio stands at 1:1 810, the urban ratio stands at 1:908 and in rural areas 1:5 090 respectively. Provision of more ZENs/ZEMs in rural areas could reduce imbalances in this category of service between rural and urban areas, their services could make a difference to the overall health status in Zambia.

It should also be mentioned that Zambia will shortly introduce medical fees. The change from non-fee to fee-paying medical services has been prompted by rising medical costs in the production and distribution of health care services and to the sagging economy. However, due to a lack of data on the criteria for payments, it is hard to say anything meaningful about the forthcoming system. It remains to be seen how the new system will either exacerbate or reduce the rural-urban disparities that already exist.

Conclusion

From the data presented in this paper, it is evident that there exist imbalances in health services between rural and urban areas in Zambia. These imbalances are skewed towards urban areas, where only a third of the population live, and these imbalances continue to grow. They are reflected in the distribution of health expenditure, personnel and facilities.

These imbalances have come about, and are perpetuated by, the pattern of deliberately investing more resources in urban than rural areas. Health

care services have been provided, in large measure, where they yield economic, political or other benefits for the sponsors. So, for example, the focus of Zambia's health policy both before and after independence seems to have been in making the metal producing area an efficient place for producing copper.

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