The brain drain of medical services in KwaZulu-Natal, South Africa

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***Abstract*:** A medical health system is a crucial service. While some countries invest little in it, others are committed to making it available to every citizen. Canada, through its Medicare system, provides one of the best medical services in the world. At the same time, South Africa is struggling to maintain adequate health care. This problem is due to both doctors' emigration as well as doctors' moving from the public to the private sector. This paper investigates the reasons for both means of exodus. Accurate data about this topic is difficult to obtain, even through examination of statistics recorded both in South Africa (SA) and in the receiving countries of Canada, Australia, New Zealand, United Kingdom, and the USA. However, this document provides the basic database to investigate this "brain drain". Through this investigation, two major problems in collecting accurate data in SA have become evident, namely, dual citizenship and the freedom of travel. In the last ten years, doctors' immigration to other countries and doctors' resignation from the public sector has reached 25% of the total number of South African doctors. The problem is serious but it can be dealt with. The South African government will have to meet the doctors' needs for a safe living environment, productive working conditions, and reasonable remuneration.

Introduction

Official emigration data are notoriously suspect, and South Africa's are no exception: Brown et al, 2001, estimate that South Africa's reported emigration understates the actual number of departures by as much as 60 per cent. Between 1987 and 1997, South African data indicate that 82 811 people emigrated either to Australia, Canada, New Zealand, the United Kingdom or the United States, while statistics for these receiving countries counts 233 609 immigrants from South Africa (Brown *et al*, 2001**:** 3). In the case of physicians, official statistics report the loss of 813 doctors

since 1986 (Sullivan, 2001); however, a recent study of the graduates of Witwatersrand's medical school provides a more alarming picture with roughly 45 per cent of graduates since 1975 located outside of the country (Weiner et al, 1998).

It is often more informative, therefore, to look at the immigration data of receiving countries to obtain a picture of a country's emigration. Canada's Landed Immigrant Data System (LIDS, 1998-2000) is a useful source for documenting the number and characteristics of South African physicians immigrating to Canada. The LIDS data record all arrivals of landed immigrants in Canada according to a host of variables, including immigration entry class, gender, age, education level, intended occupation and country of origin.

According to an article in the South African *Daily News*, 5/6/2002, the South African government is trying to stop the brain drain. The Minster of Health addresses the shortage of health care workers, particularly in the rural areas where community service was set to expand in 2002. It has been estimated that 26% of the public sector dental posts were filled through community service in 2001. In 2002, the Health Minister indicated that there would be 1742 young doctors, dentists and chemists in the field. While the leaders of the new national party in South Africa support compulsory community service, the government should apply it as was originally intended, for rural and under serviced areas. In another article in the *Daily News*, 5/11/2001 on the "brain drain" being unaffordable, the Finance Minister of South Africa, Trevor Manuel, admits that private and public sector partnerships could have a major impact on learning and productivity. As for importing expertise, according to the finance minister, foreign medical professionals are usually costly and cannot always be relied upon to understand the developmental and national concerns that local professionals grasp. The authorities attempted to deal with this problem by inviting foreign doctors, such as doctors from Cuba, but this initiative did not provide good results (Van der-Linde, 1996). According to Skelly (1999), South Africa's Recruit Doctors policy did not solve the shortage crisis. In regard to the migration of health care workers, the Minister of Health has said that their recruitment from developing countries should take place only within formal bilateral agreements between developing and developed countries. In addition to the high number of health professionals leaving SA, he said, destabilization of the workforce supply pattern is compounded by the unplanned nature of these departures. According to the Democratic Nursing Organization of South Africa (DeNOSA), health professionals were leaving because of inadequate staffing levels and poor salaries. In commenting on why KwaZulu-Natal (KZN) doctors are quitting in droves, The *Daily News*, 8/6/2002 reported

that anesthetists are getting private, more lucrative positions in private hospitals. This migration is in addition to the steady drift of these health professionals to more rewarding overseas positions. The presidents of the colleges of medicine of SA observed that there was much dissatisfaction with the conditions of employment in the public sector. In addition, remuneration was regarded as insufficient, and there was also a concern for the lack of personal safety for doctors and their families. In general, disillusionment with the public sector is the main reason for doctors joining the private sector and, in particular, for their emigrating from SA.

This paper investigates the shortage of medical services in KZN, SA through examinaion of:

a. the emigration of medical doctors from KZN, SA.
b. the resignation of doctors from the public sector to assume posts in the private sector in KZN, SA.

Methods of Analysis

The data have two components:

1) The brain drain of medical doctors emigrating from S.A., with reference to the following database:

a. Comparison of statistics, namely self-declared emigration from SA and documented immigration statistics in receiving countries.
b. The number of emigrant medical doctors departing from the three international airports in S.A. from 1994-2001.
c. Comparison between medical doctors immigrating and emigrating from KZN, SA. from 1998-2000.
d. The age, class, and gender of medical doctors who immigrated and emigrated from KZN, 2000.
e. Medical doctors immigrating to Canada, 1986-2000.
f. The number of medical doctors in Canada by province, 1991-2000.
g. The gender, country of birth, and specialization of SA medical doctors emigrating to Canada, 1991-2000.

2) The resignation of doctors from the public to the private sector in S.A., with reference to the following database:

a. The location and the number of medical doctors resigning from 1996-2001.
b. The reasons for medical doctors' resignation from 1996-2001.

c. The race of medical doctors resigning from 1996-2001 and their reasons for resigning.
d. The gender of medical doctors resigning from 1996-2001 and their reasons for resigning.

The data cover eight health regions according to urban centres associated with city or town (Table 8). In addition to the region for each doctor, the following information was covered: the name, the date of birth, the appointment and termination date, the reason for resignation (Table 9), the race (white, non white, shown in Table 10), the gender (Table 11) and the rank of each doctor emigrated from KZN. Since 1996, the KZN Health Department has been using a different computer system. Before, it was not compulsory to state the race of the person. It is only since 1996 that race and gender have become important, and that was due to concern for employment equity. The data indicated the total number of doctors' resignations for each region from 1996 to 2001. The reasons for medical practitioners' resignation from 1996-2001 were compiled as a report from the Department's computerized payroll system. This report indicates the duration of employment of groups of workers in the health sectors ranging from medical doctors to hospital support staff as well as the reasons for resignation. It also records the numbers of black, coloured, Indian, and white health services staff, and their gender. Listed in Tables 8-11 are the number of resigned medical practitioners for each urban centre, the race and gender for each, and reasons for their resignations.

Results and Discussion

1) Doctors' emigration from South Africa:

The increase in self-declared emigration from SA to other countries (Table 1) has been gradual. From 1970 there have been three major peaks. These occurred in 1977, 1986 and 1994. The main destination countries were the UK, Australia, and New Zealand. In 2000, the number of self-declared emigrants was 21% higher than in 1999, increasing from 8487 to 10 262 (Statistics SA, 2000). Age and occupation are two important characteristics of documented immigrants and self-declared emigrants. For self-declared emigrants, the major peak occurs in the age group 30-34. For ages below five and ages forty and over, there is a relatively higher proportion of self-declared emigrants than documented immigrants, while for ages 20 to 40 there is, conversely, a relatively higher proportion of documented immigrants than self-declared emigrants. For both profiles there is a dip in the number of international migrants aged 70-74. For self-

declared emigrants, out of a total of 10 262, 6434 (62.7%) were economically active, while 3828 (37.3%) were not. Of the economically active documented self-declared emigrants, 2439 (23.8%) were in a professional category, followed by 1057 (10.3%) in the clerical and sales category (Statistics SA, 2000).

Table 1: *Comparison of accumulated statistics of self-declared emigration from S.A. statistics and documented immigration statistics in receiving countries (SA citizens and residents). Source: Statistics SA, 2000.*

Year	SA	USA	SA	AUST	SA	NZ	SA	CAN.	SA	UK
1994	11082		40025	58600	5644	9062	12114	26897	89255	80030
1995	11964	52000	41532	60900	6583	10198	12793	27865	91300	84020
1996	12927		43299	64100	7849	11334	13567	28465	93543	88010
1997	13759		44807	66253	9006	14891	14124	30519	95705	92000
1998	14648		46438	68406	9875	14753	14573	32154	98015	
1999	15475		47982		10836	14988	14914	33851	100331	
2000	16574		49526		11730	15474	15396	35762	103183	

Table 2 shows that the total number of declared medical emigrants from SA reached 725 from 1994 to 2001. The years 2000 and 1996 have shown the highest number of doctors leaving the country (105 and 103 respectively), whereas the year 1995 shows the lowest number leaving the country (71 doctors). If one compares the number of doctors coming to the country to those who left the country through1994 to 2001, it becomes obvious that the loss of doctors was consistent and significant every year. The maximum loss of doctors corresponds to the maximum number of emigrant doctors in the year 1996 and 2000 and the least number in the year 1995. From 1994 to 2001, 727 doctors left the country, but only 56 doctors immigrated to SA. The total number of doctors immigrating to SA is 56 during the same period with the maximum number of 14 doctors in 2001 and no doctors at all in 1994. Dentist practitioners rated second and medical specialists third in the list of both emigration and immigration.

Table 3 shows a comparison between the loss and gain of doctors between 1998 and 2000, in addition to the emigration of medical professionals leaving from the three international airports. While the number of emigrant doctors in the year 1998, 1999, and 2000 was the same in Tables 2 and 3, the immigrant total in Table 3 was much higher than that recorded in Table 2. The difference in the total loss of 34 doctors was partially due to the result of some of the doctors (showing as a gain) coming from other provinces to work in KZN.

Table 2: *The number of emigrant doctors departing from the three SA international airports from 1994 to 2001. Source: Statistic SA, 2000*

Medical professions	1994	1995	1996	1997	1998	1999	2000	2001	Years
Practitioner	72	56	92	60	77	68	89	88	
Specialist	21	15	11	22	17	15	16	6	
Medical Dr.	93	71	103	82	94	83	105	94	Emigration
Dental	16	14	33	50	13	12	31	27	
Practitioner	0	4	3	0	9	9	12	13	
Specialist	0	1	2	0	2	0	0	1	
Medical Dr.	0	5	5	0	11	9	12	14	Immigration
Dental	0	2	1	0	0	1	1	2	
Net Medical Dr.	-93	-66	-98	-82	-83	-74	-93	-80	

Table 3: *Medical occupation of immigrants and emigrants from 1998-2000. Source: Statistic SA, 2000*

Medical professions	1998	1999	2000	Years
Practitioner	77	68	89	
Specialist	17	15	16	
Medical Dr.	94	83	105	Emigration
Dental	13	12	31	
Practitioner	25	38	21	
Specialist	3	1	1	
Medical Dr.	28	39	22	Immigration
Dental	0	1	1	
Net Medical Dr.	-89	-44	-83	

Table 4 shows the gender of the doctors emigrating from and immigrating to SA. The demographic structure of the emigrant doctors is similar to that of the wider doctor population. We see that 159 doctors were between the ages of 25 and 64 and only one was over 65. Female emigration was higher than male: 304 female and 155 male. The data in this table indicate there was a loss of male and female doctors in age ranges between 25 and 54 with a total of 89 doctors, with the exception of a gain of two female doctors (between age 35 and 44). Out of the 111 male and female doctors who emigrated in 2000, 37 were female and 74 male; as one can see, the number of male doctors leaving SA from KZN province is twice the number of female doctors. Of the 74 male and 37

Table 4: *The age, class, and sex of medical doctors immigrating to and emigrating from KZN, SA 2000 . Source: Computerised payroll system, KZN, 1997-2001.*

Medical professions	25-29		30-34		35-44		45-54		Year2000
	Male	Female	Male	Female	Male	Female	Male	Female	Gender
Practitioner	12	6	29	10	12	0	9	1	
Specialist	3	4	4	9	1	1	4	0	
Medical Dr.	15	10	33	19	13	1	13	1	Emigrated
Dental	2	4	5	9	4	0	1	0	
Practitioner	0	0	3	3	10	3	0	1	
Specialist	0	0	0	1	0	0	1	0	
Medical Dr.	0	0	0	4	10	3	1	1	Immigrated
Dental	0	0	3	0	1	0	1	1	
Net Medical Dr.	-15	-10	-30	-15	-3	+2	-12	0	

female doctors, 33 male and 19 female doctors were between the ages of 30 and 34.

Table 5 shows the total number of doctors immigrating to Canada from various countries, including SA. Doctors' emigration represents two patterns - a decrease from 1994 to 1997, and an increase from 1997 to 2000, with the highest percentage of emigration occurring during the 1994 transition of government, followed by the lowest of 17.3% in 1997. During the period between 1994 and 2000, 25.8% of all the doctors who immigrated to Canada were from SA.

Table 6 shows the number of immigrant doctors in the various provinces of Canada. The province of Ontario has the highest number of doctors, including Canadian doctors, foreign doctors, and South African doctors (the lowest percentage of the total). B.C. has the highest number of South African doctors, while Newfoundland has the lowest number of doctors, Canadian, foreign, or South African. Saskatchewan has the highest percentage of South African doctors. Out of 57 626 doctors in Canada, 1338, or 2.3%, came from SA. Of the 602 South African physicians entering Canada between 1991 and 2000, 351 (66%) were destined for Manitoba, Newfoundland and Saskatchewan, and half initially settled in rural areas. Source: Citizenship and Immigration Canada, Landed Immigrant Data System, LIDS 1980-2000 update.

In analyzing Table 7, one notices four characteristics of South African physicians immigrating to Canada:

a. 19 per cent were women. This corresponds to the gender representation of physicians in South Africa, but is well below the recent percentage of women graduating from South African medical schools. In 1994, women comprised 20 per cent of all physicians on the registry in South Africa (Pick, 1995: 3); in

Table 5: *Medical doctors immigrating to Canada, 1986-2000. Source: LIDS, 1980-2000.*

Year of arrival	From all countries	From South Africa	% from South Africa
1986	119	8	6.7%
1987	240	43	17.9%
1988	171	35	20.5%
1989	234	55	23.5%
1990	163	28	17.2%
1991	240	49	20.4%
1992	244	67	27.5%
1993	291	107	36.8%
1994	185	66	35.7%
1995	172	57	33.1%
1996	169	33	19.5%
1997	156	27	17.3%
1998	186	38	20.4%
1999	151	32	21.2%
2000	196	61	31.1%
Total	2917	711	25.8%

Table 6: *The number of medical doctors in Canada by province from 1991 to 2000. Source: Canadian Institute of Health Information (2001), Sullivan (2001).*

Province	Total Medical	Canadian Medical	Foreign Medical	South African Medical	%Foreign	% South African
Newfoundland	912	521	391	46	42.9%	5.0%
Manitoba	1984	1364	620	124	31.3	6.3
Sask.	1560	754	806	263	51.7	16.9
Alberta	4971	3622	1349	195	27.1	3.9
Ontario	21160	15880	5280	305	25.0	1.4
BC	7942	5737	2205	378	27.8	4.8
Others	19097	16488	2609	26	13.7	0.1
Total	57626	44366	13260	1338	23.0	2.3

1998, over half of all first-year medical school students were women (Moomal and Pick, 1998: 5).

b. Emigrants tended to be extremely young. The average age was 42 years, with 70% under 45. Moreover, the average age has fallen annually, from 44.5 to 38 years between 1991 and 1999.

c. 87.5% were born in South Africa, with the remainder fairly evenly divided between Europe, other African countries and the rest of the world. Since data do not refer to citizenship, it is not strictly comparable to data on South Africa's stock of physicians. It is noteworthy, however, that foreign doctors comprise only 5.8% of the South African physician workforce.

d. 32 % of migrants were specialists as opposed to general practitioners. This compares to a South African physician workforce of which 28% are specialists (Van Rensburg and Van Rensburg, 1999: 16).

Table 7: *The gender, country of birth, and specialization of SA medical doctors immigrating to Canada, 2000. Source: LIDS, (1998-2001).*

Gender	Male	485	80.6%
	Female	117	19.4
Age	35	33	5.5%
	35-39	185	30.7
	40-44	205	34.1
	45-49	108	17.9
	50-54	40	6.6
	55-59	15	2.5
	60+	16	2.7
Country Of Birth	South Africa	527	87.5%
	Other Countries	75	12.5
Specialization	Practitioner	312	51.8
	Specialists	148	24.6
	Others	142	23.5
Total		602	

2) Doctors resigning from the public sector in KwaZulu-Natal:

Table 8 indicates that the highest number of resignations among all the major health centres totaled 892 doctors in Durban between 1996 and

Table 8: *The location and the number of medical practitioners resigning from 1996-2001. Source: Computerised payroll system, KZN, 1997-2001.*

Location/years	1996	1997	1998	1999	2000	2001
Port Shepstone	10	19	31	51	80	76
Pietermaritzburg	51	169	184	53	20	70
Ladysmith	19	24	35	10	22	63
Ulundi	10	37	220	25	21	71
Jozini	7	29	35	2	6	6
Durban	161	164	297	87	145	38
Newcastle	5	26	15	5	1	2
Empangeni	26	69	47	20	5	2
Total	289	537	864	253	300	328

2001. The lowest number of doctor resignations (54 doctors) was in Newcastle during the same period. In 2001 there was a shift in the highest number of doctor resignations from Durban to Port Shepstone. The lowest number of doctor resignations in this year was in Empangeni and Newcastle, with two doctors from each location. While the number of doctor resignations does not reflect an absolute loss, it does show a trend of loss of public sector doctors to the private sector. The very small urban centres with small populations such as Jozini, Empangeni, Ladysmith, and Newcastle have experienced insignificant loss due to the small numbers they had in 1996.

Table 9 shows the reasons for medical doctors resigning from 1996 to 2001. The author has combined overlapping reasons reducing the number from twenty-one to eight:

a. Changing from the public to the private sector for given reasons as defined by the South African system: invalid reasons, other occupation, contract expired, own business, other reason, resigning of position.
b. Better remuneration.
c. Nature of work environment, and insufficient progress of work .
d. Personal reason: marriage, grievance, transport problem, domestic problems, pregnancy.
e. Bad health and age.
f. Further studies.
g. Translation; permanent, temporary, part-time, permanent probation. This refers to translation from the local (tribal)

Table 9: *The reasons for medical practitioners' resignation from 1996-2001. Source: Computerised payroll system, KZN, 1997-2001.*

Reasons	1996	1997	1998	1999	2000	2001
1. Invalid reason	170	298	631	240	161	189
2. Better remuneration	54	41	19	3	6	3
3. Nature of work	38	140	170	8	22	113
4. Personal reason	15	47	27	0	7	17
5. Bad health and age	3	5	7	0	98	0
6. Further studies	4	3	7	1	1	2
7. Translation	5	4	2	0	1	1
8. Emigration	0	0	1	1	4	3
Total	289	537	864	253	300	328

language to English or Afrikaans, which is a necessary function for South African doctors.

h. Emigration.

Of 2145 reasons, 1262 or 58.8% of invalid reasons of resignation between 1996 and 2001 represent the highest number of resignation. The "nature of work" reason totaling 491 represents the second most significant reason for resignation. The number of resignations based on better remuneration (126), personal reasons (113), and bad health and age reasons (113) become the second and third most common. The lowest number of resignations and the insignificant reasons for resignation were indicated under further study (18), translation (13), and emigration (9). All the above reasons for resignation from 1996 to 2001 can be partially due to doctors emigrating, and mostly due to doctors moving from the public to the private sector. When we compare the number of resignations between 1996 and 2001, we find that out of 881 reasons of resignation, 590 or 67.0% were for invalid reasons. It was also found that 16.2% of resignations were as a result of the nature of work, 11.1% for bad health and age, and less than 2% for the remaining reasons.

Table 10 shows that out of 2145 reasons for resignation between 1996 and 2001, 1517 or 70.7% were those of non-white doctors. Out of 1689 invalid reasons, 1048 were ascribed to non-white doctors. Table 10 shows also that out of 590 "no reason" resignations, 190 or 32.2% of white doctors had resigned between 1999 and 2001, and out of 881 reasons in total, 190 or 21.6% white resigned, but switched from the public to the private sector. The results indicate clearly that the number of resignations of white doctors

Table 10: *The reason for and the race of medical practitioners resigning from 1996-2001. Source: Computerised payroll system, KZN, 1997-2001.*

Year	1996		1997		1998		1999		2000		2001	
Code/race	Nw	W	Nw	W	Nw	W	Nw	W	Nw	W	Nw	W
Invalid reason	110	60	170	128	368	263	163	77	116	45	121	68
Numeration	42	12	33	8	8	11	0	3	6	0	2	1
Nature of work	26	12	81	59	83	87	3	5	9	13	56	57
Personal reason	6	9	25	22	9	18	0	0	3	4	7	10
Bad health, age	2	1	1	3	3	4	0	0	40	58	0	0
Future study	3	1	1	2	5	2	0	1	1	0	1	1
Translation	3	2	3	1	0	2	0	0	0	1	0	1
Emigration	0	0	0	0	1	0	0	1	3	1	3	0
Total	192	97	314	223	477	387	166	87	178	122	190	138
Total	289		537		864		253		300		328	

using “invalid reason” was very low (32.2%) in comparison to the very high non-white figure of 67.8%.

Table 11 indicates the gender of medical doctors and the reasons for their resignation from 1999-2001. The number of male and female resignations increased from 253 in 1999 to 328 in 2001. While the increase was insignificant, the trend was consistent. The number of female doctors’ resignations increased significantly from 104 to 175, while the number of male doctors’ resignations changed insignificantly from 148 to 153 between 1996 and 2001. It was noticed that the percentage of male resignation using invalid reason (60.7 %) was higher than the female percentage due to the original demography of medical doctors. It was also found that out of 881 reasons of male and female resignation, 358 or 40.6% represented the male and 59.4% represented the female. While males and females are needed equally for the health services, the loss of female doctors is more significant than the loss of male doctors due to the demography of gender. However, the loss of female doctors from the public sectors is associated directly or indirectly with SA’s need of professional males.

Conclusion

Medical practitioner emigration from SA and resignation from the public to the private sectors constitute a serious problem in SA. This problem has been the focus of the media for some time. Local and national newspapers draw the authorities’ attention to the alarming changes in the medical services in SA. Newspaper articles such as: ‘KZN Doctors Are Quitting In Droves,’ ‘Brain Drain Move,’ ‘Keeping Doctors At Home,’

Table 11: *The relationship between the reason and the gender of medical doctors resignations from 1996-2001. Source: Computerised payroll system, KZN, 1997-2001.*

Reasons	**1999**		**2000**		**2001**	
Sex	Male	Female	Male	Female	Male	Female
Invalid reason	140	100	114	47	104	85
Numeration	1	2	3	3	2	1
Nature of work	6	2	19	3	32	81
Personal reason	0	0	3	4	10	7
Bad health, age	0	0	13	85	0	0
Future study	0	1	1	0	1	1
Translation	0	0	0	1	1	0
Emigration	1	0	3	1	3	0
Sub total	148	105	156	144	153	175
Total	253		300		328	

'Call To Address Reasons For Professional Brain Drain,' 'Bid To Halt Brain Drain,' 'Government Tries To Stop Brain Drain,' 'We Have To Halt The Brain Drain,' and 'Brain Drain Unaffordable,' are a few examples protesting the shortage of doctors in SA. In comparing the data from the sending country (SA) and the receiving countries, one encounters the classic problem of flow versus stock data. The sending country has only incomplete flow data on persons leaving during the year while the receiving country may in principle have both flow and stock data. It is therefore best to compare flow data of one country with flow data of the other country. With regard to reported data, the closest comparison that can be made is between census data in the receiving country and commulative flow from the sending country. In Canada, Statistics Canada conducts a census every five years from which they provide stock statistics on foreign-born populations resident in Canada. In the comparative assessment, the census data available at three dates were used. In addition, flow statistics on SA citizens granted permanent residence in Canada are published annually by the Department of Citizenship and Immigration Canada.

According to the South African Ministry of Health, the emigration of doctors has to be regulated according to a bilateral agreement between involved countries. At the same time, SA must make greater efforts to accommodate and acclimatize foreign doctors. The Minister of Finance recommended that SA should be listening closely to the reasons for doctors leaving. Through interviews with many doctors the media found that the

main reason was a need for safety. Cost of living and remuneration came second, contrary to the belief of the authority of SA that remuneration is the main reason. The work environment in terms of supporting nursing staff, language interpretation, and hospital medical facilities became the final legitimate reason for doctors' resignation and emigration.

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