CHAPTER 2

The nature and extent of movement of trained health professionals

2.1 Introduction

The international and global dimensions of migration mean that an understanding of the size of the problem of migration at a global level, the categories of health workers affected, where they go and why, and why others stay at home, is fundamental to any attempt at developing and implementing effective policies aimed at retention of staff within national health systems. In the light of this it is perhaps surprising that little up to date information relevant to migration exists at either international or regional levels: there appear to have been no comprehensive studies since the WHO study published in 1979, and directly relevant statistics are not available from WHO[22] or other potentially relevant international agencies[23]. This chapter therefore looks at the information currently available about migration in the Commonwealth, concentrating on movements from developing to more developed countries and the effects of these losses on developing countries.

To understand the impact of losses in individual countries it is necessary to understand something of the countries themselves. One of the strengths of the Commonwealth is that it brings together in partnership highly developed countries (e.g. Canada, Australia, the United Kingdom and New Zealand) and countries with much lower levels of human development, and includes many small island states of varying degrees of development[24]. The impact of losses is very different in each of these situations. Along with this there are great variations in population, GNP growth rate and external debt[25], which affect the ability of countries to deal with their problems of migration. Although it is beyond the scope of this publication to set out all these factors in detail, the discussion of migration is preceded by a section setting out information currently available internationally about relative numbers of different categories of health personnel in different Commonwealth countries and how this is related to their level of development. Absolute numbers of staff, if available, are given later. Some of these data are illustrative only, giving an indication of numbers of staff available in countries in particular regions.

2.2 Estimates of health personnel

As set out in Table 1, there are considerable variations in the relative numbers of different categories of health personnel in Commonwealth countries. The estimates in Table 1 have been extracted from worldwide data collected by WHO[26] and need to be treated with considerable caution because of the non-uniform way in which they were collected[22]. Nevertheless they give the best indication presently available about the current position.

In any one country, the numbers of staff in different categories in relation to population are in general fairly directly related to the level of development, as measured by the Human Development Index (HDI)[24] (Figure 1 and Table 2). The HDI was developed as a tool to measure average achievements in basic human development in one simple composite index

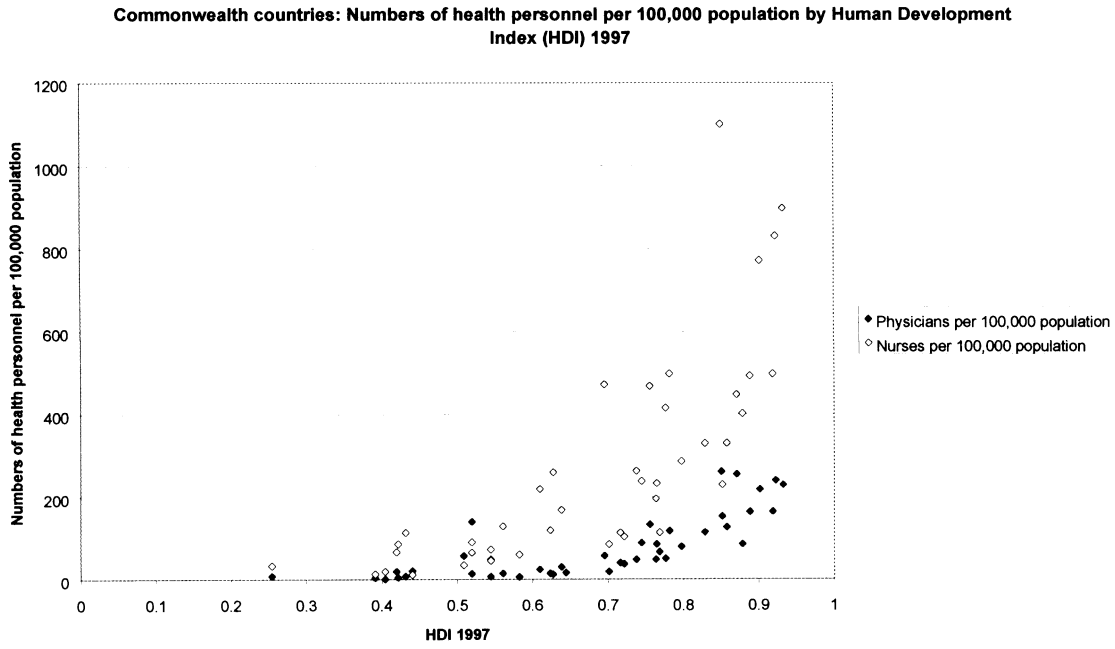
and to produce a ranking of countries. The index reflects achievements in lifespan, being knowledgeable and having a decent standard of living, by a single figure between 0 and 1 based on measures of life expectancy, educational attainment and income. A high figure is superior to a lower one. The methodology was significantly refined for the 1999 human development report[24].

2.3 The nature and extent of migration

Although the exact extent of current migration and other losses is difficult to quantify, there is no doubt that loss of trained health professionals is a major problem for many Commonwealth countries. The negative impact of this problem is felt most strongly in small states where the overall numbers of staff are so small that the loss of even one key worker can have a catastrophic effect on the delivery of health services. Furthermore, although any of the health professions can be affected, physicians and nurses constitute the main groups that migrate.

The Pacific Region, apart from Australia and New Zealand, consists of a number of small island states with low populations and small numbers of most categories of health personnel. Numbers of health personnel for selected countries are illustrated in Table 3. These countries exemplify countries where loss of key workers can have major effects. For example, the emigration of doctors is a particular problem in Fiji, Kiribati, Samoa, Tonga and Tuvalu[3]. In Kiribati, although the number of doctors emigrating in the 5 years up to 1999 was only 4, this together with the loss of one dentist and one pharmacist has had a major effect on the ability to provide health services. In Tuvalu the Ministry of Health estimates that 5 doctors have emigrated in the last five years, and in Tonga the estimate during the same period is 4 doctors lost to emigration. These were all specialists who had been trained overseas. A further

Figure 1



[1] *Source of data*: UNDP. Human Development Report 1999. Available on-line from www.undp/hrdo/report.htlm [Accessed 4 December 2000]

Table 1 Commonwealth countries: WHO Estimates of Health Personnel[1]
Physicians, Nurses, Midwives, Dentists and Pharmacists (around 1998)

Key: ... Data not available
.. Category not applicable
a Includes midwives
b Includes dental assistants

Country	Rates per 100,000 population / Year														
	Physicians			Nurses			Midwives			Dentists			Pharmacists		
Antigua and Barbuda	113.6	*1996*		330.3	*1996*		...	...		18.2	*1996*		...	...	
Australia	240.0	*1998*		830.0	*1998*		40.0	*1998*		40.0	*1998*		...	...	
The Bahamas	151.8	*1996*		229.7	*1996*		...	...		25.4	*1996*		...	...	
Bangladesh	20.0	*1997*		11.0	*1997*		...	...		...	...		...	...	
Barbados	125.4	*1993*		330.3	*1993*		...	...		16.1	*1993*		...	...	
Belize	54.8	*1996*		82.0	*1996*		...	...		10.6	*1996*		...	...	
Botswana	23.8	*1994*		219.1	*1994*		0.0	*1994*		2.2	*1994*		...	...	
Brunei Darussalam	84.8	*1996*		401.5	*1996*		...	...		12.8	*1996*		...	...	
Cameroon	7.4	*1996*		36.7	*1996*		0.5	*1996*		0.4	*1996*		...	...	
Canada	229.1	*1995*		897.1	*1996*		...	...		58.6	*1997*		...	...	
Cyprus	255.0	*1996*		447.0	*1996*	[a]	..	..		65.0	*1995*		104.0	*1995*	
Dominica	49.3	*1996*		415.5	*1996*		...	...		5.6	*1996*		...	...	
Fiji Islands[2]	47.6	*1997*		195.1	*1997*		...	...		4.3	*1997*		...	...	
The Gambia	3.5	*1997*		12.5	*1997*		8.2	*1997*		0.5	*1997*		...	...	
Ghana	6.2	*1996*		72.0	*1996*		53.2	*1996*		0.2	*1996*		...	...	
Guyana	18.1	*1997*		84.2	*1997*		...	...		3.8	*1997*		...	...	
India	48.0	*1992*		45.0	*1992*		...	...		...	...		...	...	
Jamaica	140.1	*1996*		64.5	*1996*		...	...		9.0	*1994*		...	...	
Kenya	13.2	*1995*		90.1	*1995*		...	...		2.2	*1995*		...	...	
Kiribati	29.6	*1998*		235.8	*1998*		...	...		4.9	*1998*		...	...	
Lesotho	5.4	*1995*		60.1	*1995*		47.0	*1995*		0.5	*1995*		...	...	
Malawi	...	...		...	...		...	...		...	...		...	...	
Malaysia	65.8	*1997*		113.3	*1997*		27.1	*1997*		8.6	*1997*		...	...	
Maldives	40.0	*1995*		113.0	*1995*		185.0	*1995*		...	...		...	...	
Malta	261.0	*1998*		1100.0	*1993*		77.1	*1993*		35.8	*1998*		49.3	*1998*	
Mauritius	85.0	*1995*		232.9	*1995*		...	...		13.5	*1995*		...	...	
Mozambique	...	...		...	...		...	...		...	...		...	...	
Namibia	29.5	*1997*		168.0	*1997*		116.5	*1997*		4.0	*1997*		...	...	
Nauru	157.0	*1995*		588.0	*1995*		...	...		...	...		...	...	
New Zealand	217.5	*1997*		771.0	*1997*		56.2	*1997*		39.0	*1997*		...	...	
Nigeria	18.5	*1992*		66.1	*1992*		52.4	*1992*		2.6	*1992*		...	...	
Pakistan[3]	57.0	*1997*		34.0	*1996*	[a]	..	..		2.3	*1997*		34.0	*1996*	
Papua New Guinea	7.3	*1998*		67.0	*1998*		...	...		2.7	*1998*		...	...	
St Kitts and Nevis	117.1	*1997*		497.6	*1997*		...	...		19.5	*1997*		...	...	
St Lucia	47.3	*1997*		263.0	*1997*		...	...		6.2	*1997*		...	...	
St Vincent and the Grenadines	87.7	*1997*		238.6	*1997*		...	...		5.3	*1997*		...	...	
Samoa	34.4	*1996*		155.0	*1996*		36.0	*1996*		4.0	*1996*		...	...	

Seychelles	132.4	*1996*		467.6	*1996*		394.6	*1996*		12.2	*1996*		...	...
Sierra Leone	7.3	*1996*		33.0	*1996*		4.7	*1996*		0.4	*1996*		...	...
Singapore	162.7	*1998*		492.1	*1998*	[a]	...	...		28.9	*1998*		...	...
Solomon Islands	14.0	*1995*		119.0	*1995*		...	...		7.0	*1995*		...	...
South Africa	56.3	*1996*		471.8	*1996*		...	...		17.8	*1996*		...	...
Sri Lanka	36.5	*1999*		102.7	*1999*		41.9	*1999*		2.5	*1999*		4.5	*1999*
Swaziland	15.1	*1996*		...	...		...	...		...	...		...	...
Tonga	44.0	*1997*		315.1	*1997*		31.0	*1997*		9.2	*1997*		...	...
Trinidad and Tobago	78.8	*1994*		286.8	*1994*		...	...		8.4	*1997*		...	...
Tuvalu	30.0	*1999*		300.0	*1999*		90.0	*1999*		10.0	*1999*		...	...
Uganda	...	...		18.7	*1996*		13.6	*1996*		0.2	*1996*		...	...
United Kingdom	164.0	*1993*		497.0	*1989*		43.3	*1989*		39.8	*1992*		58.2	*1992*
United Republic of Tanzania	4.1	*1995*		85.2	*1995*		44.8	*1995*		0.7	*1995*		...	...
Vanuatu	12.0	*1997*		260.0	*1997*		...	...		...	...		...	...
Zambia	6.9	*1995*		113.1	*1995*		...	...		...	...		...	...
Zimbabwe	13.9	*1995*		128.7	*1995*		28.1	*1995*		1.3	*1995*		...	...

[1] *Source*: WHO Statistical Information Systems: Estimates of numbers of doctors, dentists and nurses by Member State provided by WHO Regional Offices. Available from www-nt.who.int/whosis/statistics/menu.cfm [Accessed 4 December 2000]

[2] Fiji Islands was suspended from the councils of the Commonwealth in May 2000 following the overthrow of its democratically elected government

[3] Pakistan was suspended from the councils of the Commonwealth following a military coup in that country

analysis of doctor resignations in Tonga over a 10-year period, excluding the one who retired after 39 years service, indicated that 7 of 13 (54%) left to pursue further educational qualifications, 2 left to take up private practice in Australia, 2 left to take up academic or other public appointments elsewhere, and 2 resigned, one on marriage to a national of another country and the other because of family commitments.

The situation with nurses also varies between countries in the Pacific region[3]. In the Cook Islands 30 nurses are estimated to have been lost in the 5 years prior to 1999 as a result of either retirement or migration, and in Tuvalu it is estimated that 6 nurses emigrated in the 6 years up to 1999. In Tonga, in 1999 alone, 25 nurses were thought to have emigrated and gone to New Zealand. In Fiji it was reported in the press in June 1999 that more than 70 nurses attended specially established interviews designed to attract nurses to employment in New Zealand[27]. Although it was not known how many nurses would subsequently take up offers of employment in New Zealand, at the time of the report the requests from the Fiji Nursing Association for improved conditions and salaries remained un-addressed by the government and it was thought that while this situation remained unresolved, an outflow of nurses seeking improved pay and conditions of service would continue. Such an outflow was also thought to jeopardise the eventual success of the newly established nurse practitioner training programme.

Among small states in the Pacific and Indian Ocean regions, only Ministries of Health in the Maldives, Nauru, Papua New Guinea and the Solomon Islands considered that emigration of health service personnel was not an issue, although in the Solomon Islands it was seen as a possible issue in the future[3]. In the Seychelles, emigration appeared to be a cyclical problem,

Table 2 Commonwealth countries. Relationship between human development and estimates of health personnel

Country	Population (000s) 1996[1]	Human development index (HDI) 1997[2]		Numbers of health personnel per 100,000 population[3]		
		Rank	Value	Physicians	Nurses[4]	Dentists
High human development						
Canada	29,964	1	0.932	229.1	897.1	58.6
Australia	18,312	7	0.922	240.0	830.0	40.0
United Kingdom	58,782	10	0.918	164.0	497.0	39.8
New Zealand	3,635	18	0.901	217.5	771.0	39.0
Singapore	3,044	22	0.888	162.7	492.1	28.9
Brunei Darussalam	290	25	0.878	84.8	401.5	12.8
Cyprus	740	26	0.870	255.0	447.0	65.0
Barbados	264	29	0.857	125.4	330.3	16.1
The Bahamas	284	31	0.851	151.8	229.7	25.4
Malta	373	32	0.850	261.0	1100.0	35.8
Antigua and Barbuda	66	38	0.828	113.6	330.3	18.2
Medium human development						
Trinidad and Tobago	1,297	46	0.797	78.8	286.8	8.4
St Kitts and Nevis	41	51	0.781	117.1	497.6	19.5
Dominica	74	53	0.776	49.3	415.5	5.6
Malaysia	20,565	56	0.768	65.8	113.3	8.6
Mauritius	1,134	59	0.764	85.0	232.9	13.5
Fiji Islands[5]	803	61	0.763	47.6	195.1	4.3
Seychelles	77	66	0.755	132.4	467.6	12.2
St Vincent and the Grenadines	112	75	0.744	87.7	238.6	5.3
St Lucia	158	81	0.737	47.3	263.0	6.2
Jamaica	2,547	82	0.734	140.1	64.5	9.0
Sri Lanka	18,300	90	0.721	36.5	102.7	2.5
Maldives	265	93	0.716	40.0	113.0	
Guyana	839	99	0.701	18.1	84.2	3.8
South Africa	37,643	101	0.695	56.3	471.8	17.8
Swaziland	926	113	0.644	15.1	...	...
Namibia	1,584	115	0.638	29.5	168.0	4.0
Vanuatu	173	116	0.627	12.0	260.0	...
Solomon Islands	389	118	0.623	14.0	119.0	7.0
Botswana	1,480	122	0.609	23.8	219.1	2.2
Lesotho	2,023	127	0.582	5.4	60.1	0.5
Papua New Guinea	4,401	129	0.570	7.3	67.0	2.7
Zimbabwe	11,248	130	0.560	13.9	128.7	1.3
India	945,121	132	0.545	48.0	45.0	

Ghana	17,522	133	0.544	6.2	72.0	0.2
Kenya	27,364	136	0.519	13.2	90.1	2.2
Pakistan[6]	133,510	138	0.508	57.0	34.0	2.3
Low human development						
Nigeria	114,568	146	0.456	18.5	66.1	2.6
Bangladesh	121,671	150	0.440	20.0	11.0	...
Zambia	9,215	151	0.431	6.9	113.1	...
United Republic of Tanzania	30,494	156	0.421	4.1	85.2	0.7
Uganda	19,741	158	0.404	...	18.7	0.2
Malawi	10,016	159	0.399	...	...	...
Gambia	1,147	163	0.391	3.5	12.5	0.5
Mozambique	18,028	169	0.341	...	...	...
Sierra Leone	4,630	174	0.254	7.3	33.0	0.4
HDI not available						
Samoa	172	...	...	34.4	155.0	4.0
Tonga	97	...	...	44.0	315.1	9.2
Tuvalu	10	...	...	30.0	300.0	10.0
Belize	222	...	...	54.8	82.0	10.6
Cameroon	13,676	...	...	7.4	36.7	0.4
Kiribati	82	...	...	29.6	235.8	4.9
Nauru	11	...	...	157.0	588.0	

[1] *Source*: Commonwealth Secretariat. *Health in the Commonwealth: sharing solutions 1999/2000*. Appendices. Table 1: Health indicators (i). London: Kensington Publications; 1999

[2] *Source*: UNDP. *Human Development Report 1999*. Figures in 1999 report reflect new and improved data for 1997 and were calculated using new methodology. Available on-line from www.undp.org/hdro/report.html [Accessed 4 December 2000]

[3] *Source*: WHO. Estimates of Health Personnel (around 1998) Available on-line from www.who.int/whosis/statistics/menu.cfm [Accessed 5 December 2000]

[4] Figures for Cyprus, Pakistan and Singapore include midwives

[5] Fiji Island was suspended from the councils of the Commonwealth in May 2000 following the overthrow of its democratically elected government.

[6] Pakistan was suspended from the councils of the Commonwealth in October 1999 following a military coup in that country

with periods of stability followed by periods when emigration took place, based on opportunities that exist overseas.

The Caribbean region also consists of island states, but several of these are highly developed and have larger numbers of health personnel. This is illustrated in Table 4. However, all 10 countries responding to a questionnaire indicated that they had a shortage of one or more categories of health professionals[4]. The main problem was retention of nurses/midwives, but shortages were also noted in all the other categories of health worker specified on the questionnaire, namely, medical laboratory technologists, pharmacists, physicians, public health inspectors, and radiographers. Barbados indicated that it also had problems retaining physiotherapists and occupational therapists, and Trinidad and Tobago was experiencing problems retaining scientific assistants. The survey revealed a clear perception that there were three main reasons for this loss of trained health personnel: poor conditions of service, poor conditions of work and much more attractive opportunities in the private sector and elsewhere.

In contrast the African region is characterised by large countries, some of which are amongst the most poorly developed in the world[24]. Rural populations tend to be widely dispersed and

may be several days journey from the nearest town. Some illustrative overall figures are given in

***Table 3* Pacific region: numbers of health personnel in selected countries[1]**

	Cook Islands		Kiribati		Papua New Guinea		Samoa		Tonga		Tuvalu	
Population	18,500		78,000		4,197,000		169,000		104,000		13,000	
Year	1998		1998		1996		1998		1998		1999	
Staff category[2]												
	Staff in post	Establishment	Staff in post	Establishment	Staff in post	Establishment	Staff in post	Establishment	Staff in post	Establishment	Staff in post	Establishment
Medical	17	...	16	25	259	...	47	60	80	93	6	9
Dental	4	...	10	18	300	...	44	56	34	37	3	3
Nursing	65	...	172	192	3220	...	337	393	337	339	34	43
Pharmacy	4	...	5	7	...	...	17	21	13	15	2	3
Laboratory	7	...	11	15	...	...	28	34	20	23	1	2
Imaging	2	...	3	6	...	...	17	21	14	15	2	2
Allied health	3	...	10	13	...	...	23	27	10	13	1	1
Health Extension Officers	-	-	-	-	268	...	-	-	-	-	-	-
Community Health workers[3]	-	-	-	-	1028	...	-	-	-	-	9	9
Aid-post orderlies	-	-	-	-	909	...	-	-	-	-	-	-
Health inspectors	23	....	9	11	71	...	28	34	29	30	1	1

[1] *Source:* Dewdney J. Draft workforce plans of selected countries 1998. As quoted in Rotem A and Bailey M. *Health personnel migration within Commonwealth countries.* A report prepared for the Commonwealth Secretariat by the School of Medical Education Faculty of Medicine, University of New South Wales, Australia; 1999 (unpublished)

[2] For ease of comparison, in the quoted table staff were "bulked" i.e. nurses and nursing assistants were presented as one total figure; health education officers were included with physiotherapists as "allied health"

[3] Figures for community health workers and aid-post orderlies were recognised as being inaccurate as these may be defined differently in different countries or not counted as part of the salaried workforce

Table 5, but these may mask stark contrasts between urban and rural areas. Migration of health workers is a problem for many of the countries with which contact was made, especially Ghana, Lesotho, Malawi, Nigeria, Tanzania, Uganda, Zambia, and Zimbabwe[10]. Botswana has less of a problem and in Namibia migration is not an issue. In South Africa, emigration is accompanied by significant immigration of health professionals. Immigration is also a feature in some other countries such as Namibia and Lesotho.

In Ghana, for example, studies have shown that the country lost approximately 61% of doctors that graduated from one medical school over the 10-year period between 1985 and 1995 and the indications are that the proportions have increased in recent years[28]. Whereas, in 1980 the average age of lecturers in the University of Ghana Medical School was 35, it is currently estimated to be nearer 55 and this is thought to reflect the unavailability of younger graduates to replace existing lecturers[29]. There is a perception that the severe shortage of nurses has frequently been made worse by active recruitment of nurses by agents from the United Kingdom[10], although this situation should improve following the introduction in the

United Kingdom in November 1999 of a government policy not to recruit actively where this will have an adverse effect on the health care systems of the home

***Table 4* Caribbean region: health professionals by category and ratio per 100,000 population by country (around 1997)[1]**

Country	Year	Physicians		Professional nurses		Dentists	
		Number	Ratio/ 100,000 pop.	Number	Ratio/ 100,000 pop.	Number	Ratio/ 100,000 pop.
Anguilla	1997	14	175.0	29	362.5	1	12.5
Antigua & Barbuda	1996	75	113.6	218	330.3	12	18.2
The Bahamas	1996	419	151.8	634	229.7	70	25.4
Barbados	1993	334	125.4	880	330.3	43	16.1
Belize	1996	119	54.8	178	82.0	23	10.6
Bermuda	1997[2]	113	176.6	523	895.5	27	42.2
British Virgin Islands	1997	23	115.0	66	330.0	4	20.0
Cayman Islands	1997	64	193.9	197	597.0	11	33.3
Dominica	1996	35	49.3	295	415.5	4	5.6
Grenada	1996	46	49.5	342	367.7	8	8.6
Guyana	1997	153	18.1	713	84.2	32	3.8
Jamaica	1996[3]	3,428	140.1	1,578	64.5	220	9.0
Montserrat	1997	2	18.2	32	290.9	1	9.1
St Kitts and Nevis	1997	48	117.1	204	497.6	8	19.5
St Lucia	1997	69	147.3	384	263.0	9	6.2
St Vincent & the Grenadines	1997	100	87.7	272	238.6	6	5.3
Trinidad & Tobago	1994	1,074	78.8	3,910	86.8	109	8.4
Turks & Caicos Islands	1997	11	73.3	29	193.3	1	6.7

[1] *Source*: PAHO/WHO. *Health conditions in the Americas, Vol. 1*. Washington, DC: PAHO/WHO;1998. p.284-286. As quoted in Reid UV. *Human resource development for health project: Commonwealth Caribbean*. A report prepared for the Commonwealth Secretariat; 1999 (unpublished)

[2] For professional nurses, figures in Bermuda relate to 1991

[3] For dentists, figures in Jamaica relate to 1994

countries[30]. In Lesotho, only 30% of persons awarded WHO fellowships returned after studying abroad[6]. Ten doctors trained overseas in a five-year period also failed to return[31].

On the other hand, responses from Namibia and Lesotho indicated that 50% or more of doctors in the public service are expatriates[32,33]. The proportion of expatriates is smaller in South Africa but numerically far more significant. 22% of the 6,705 doctors on the register of the South African Health Professionals Council were expatriates, and 8% of doctors on the register practiced outside South Africa. 18% of the registered expatriate doctors were specialists[34].

In the Asian region, no country-specific data were obtained from countries[20]. The only figures available for migration of doctors from the Indian sub-continent are indirect and relate to "analysis of ordinary passports" (i.e. the numbers of individual doctors applying for passports) and analysis of data from recipient countries[20]. Although holding a passport does not mean an individual has ever gone abroad, or that he or she is practising or has settled in a foreign country, during the 35 years before 1986-87 on average less than 2,220 doctors

applied for passports each year, but in 1986-87 alone 5,300 doctors applied for passports. Studies from Canada, the USA, the UK and the oil exporting

***Table 5* African region: total number of staff in Ministry of Health's services in countries responding fully or partially to a questionnaire[1]**

	Ghana	Lesotho	South Africa[2]	Namibia	Malawi	Sierra Leone
No. of doctors	MOH-1998	MOH-1998	ALL-1999	ALL-1999		
Total doctors	1188	134	36,518	277	101	222
GPs	1093	109	27,012	252	81	...
Expatriates	133	74	5,507	142	...	0
Locals	960	35	21,505	110	...	...
% expatriates	12.2%	67.9%	20.0%	56.4%	...	0.0%
Specialists	95	25	9,506	25	20	...
Expatriates	...	18	1,198	10	10	0
Locals	...	7	8,308	15	10	...
% expatriates	...	72.0%	12.6%	40.0%	50.0%	0.0%
No. of nurses						
Total nurses	12,945	1,305	146,036[3]	1,516	1,643	...
Expatriates	41	10	...	10	...	...
Locals	12,904	1,295	...	1,506	...	...
% expatriates	0.3%	0.8%	...	0.7%	...	...
No. of others						
Total others	...	...	52,175[4]	40[5]	...	...
Expatriates	...	...	...	2	...	...
Locals	...	...	...	38	...	...
% expatriates	...	...	...	5.0%	...	...

[1] Source: Dovlo DY. Report on issues affecting the mobility and retention of health workers/professionals in Commonwealth African States. A report prepared for the Commonwealth Secretariat; 1999 (unpublished)

[2] Data from Health Professions Council of South Africa

[3] 1994 data

[4] Others comprise of dentists, psychologists, optometrists, physiotherapists etc

[5] Medical technicians

countries of Saudi Arabia, Libya, Kuwait, United Arab Emirates and Qatar, show that the numbers of doctors immigrating have continued at or above the rates of the 1970s with little evidence that these doctors subsequently return home[20]. More than 382,000 doctors have been trained in India since independence (1947), some 15-16% of whom are practicing abroad. This means at least 60,000 doctors have left India since independence[20]. A recent study by the Foundation for Research in Community Health for the Indian Council for Medical Research has shown that on average 40% of private sector medical doctors migrate abroad[35]. Other sources have assessed the migration rate to be as high as 57% of all graduating doctors in recent years[36]. What is striking about this migration of physicians is that not only are they highly trained, but also they are mostly from the costliest and most elite medical schools, because it is only these institutions that tend to be of international standard[20].

2.4 Countries or sectors to which personnel are lost

Despite the variations in the nature of the groups of professional staff who migrate in the different Commonwealth regions, analysis of the reports indicates there are similarities in the recipient countries to which all staff migrate. The Commonwealth constitutes one of the

largest language blocks in the world, with English used extensively for education and training in nearly all member countries. It is therefore perhaps not surprising that many Commonwealth professionals migrate to English speaking countries, particularly to those countries with which they have ties through past colonial links, previous immigration, or the migration of relatives. The direction of flow tends to be from developing to more developed countries which provide better opportunities for families and higher levels of pay for employees. More developed countries within the region may act as intermediate destinations for those who eventually migrate further afield.

Consequently, the United Kingdom and other developed Commonwealth countries (Canada, Australia and New Zealand) are common destinations for health professionals from the African region, along with the richer developing countries within the region such as Namibia and South Africa[10]. For example, the commonest destinations of Ghanaian Medical graduates who migrated in the period 1985-1994[6] were the United Kingdom 143 (55.2%), the United States: 92 (35.1%), the Republic of South Africa: 16 (6.2%) and Canada: 3 (1.3%). Of the 50% or more of expatriate doctors in Lesotho and Namibia, significant proportions come from other African Commonwealth countries[32,33].

The main destinations for professionals from the Asian region are the English-speaking countries of Canada, the USA and the UK[20]. Additionally it appears that there are significant flows to the oil exporting countries of the Middle East. Although exact data are not available, between 1975 and 1980 the number of foreign workers from Asian countries working in these oil-exporting countries increased from 360,000 to 820,000. Of this increase of 460,000 in 5 years, most were in the engineering and health/medical sectors[37]. Other data indicates that between 1982-86 80 to 99% of foreign doctors in individual Gulf countries were from outside the region, mainly from India and other countries in the Asian sub-continent[20].

The results of a survey undertaken in Commonwealth Caribbean countries showed that the losses of health professionals from the region were mainly to the USA, Canada, and the UK[4], although there was also some movement to other Caribbean countries as well as to the private sector[4].

In the Pacific region, migration was frequently associated with tribal wars, until the nineteenth century when colonial development led to transport of labour to work on tea or sugar plantations[3]. This background has produced a culture which accepts that families will relocate for various reasons. Both Australia and New Zealand now have significant South Pacific Islander populations, and there are increasing numbers of people obtaining permanent residence status in North America, often via migration to places which were previously US dependent territories. Countries of destination tend to be related to race, with the USA being the target for Micronesians, Tongans and Samoans with existing relationships there; New Zealand the target for all Polynesians and some Indofijians; and Australia the target for a smaller number of Polynesians, some Melanesians and Indofijians. Pacific Islands Chinese migrate to the United States, Canada and Australia.

Internal migration with the Pacific Island has also increased significantly, with people being primarily attracted to the towns, mining sites, plantations and tourist areas[3]. Employment is not the only attraction and factors as diverse as extra facilities, anonymity, and a wider range of stimuli draw many people, particularly teenagers and young adults.

2.5 Effects of loss of health professionals

The effects of these losses of health professionals are numerous and multifaceted and have far reaching consequences both for the economies and for the development of health services in countries. As an illustration, the following account describes the consequences as experienced in the African region[10] and these are likely to be common to many developing Commonwealth countries.

2.5.1 Loss of Health Professionals (Service providers, Tutors)

The loss of skilled personnel not only restricts or reduces service delivery and access for the population, but also impacts negatively on the training of health professionals, as persons likely to become trainers are among those lost. For example, the increasing average age of lecturers in the Ghana Medical School, thought to reflect inability to replace lecturers over the years[29], [has] already been referred to. At the same time, nursing training schools in Ghana suffer from a serious shortage of tutors. The effects of loss of health professionals on service delivery are often further exacerbated by limited expansion in training of health workers, despite population growth and expansion of services.

2.5.2 Effects on quality of care – numbers and skills

The reduced number of trained health workers and an increasing work load due to larger populations and demands for services are likely to lead to a decline in quality of care. This issue is further complicated in poorer countries by low economic performance and deterioration of infrastructure and logistic support. Even where some substitution occurs with lower grades such as auxiliaries and assistants, the absence of more highly skilled workers means diminished supervision and support to staff. In the African region quality of care has become an issue, particularly in Ghana and a number of other countries with serious mal-distributions which lead to shortages of skilled personnel in the rural areas[10].

2.5.3 Effects on ethics and professionalism, discipline and morale

The anticipated effects on the training and updating of health workers set out above may also make inroads into the quality and ethics of health professionals. In Ghana, a few well publicised cases relating to quality of care have highlighted the reductions in supervision of junior staff and the amount of responsibility left in the hands of auxiliaries and untrained personnel. Discipline and morale have suffered as some staff have felt that their supervisors lacked the technical acumen and moral authority to exercise supervisory control over them[38].

2.5.4 Effects on training of new staff

The lack of trainers and the use on non-professional tutors in training schools also affect the quality of training and consequently the quality of the health workers produced. In the African region this has affected the clinical experience that students get in the facilities due to shortage or absence of specialists to provide lectures. The lack of tutors has meant that trainers are asked to be generalists who try to teach a wide range of subjects. The number of students per tutor may also increase and lead to less attention being given to individual students. For example, in Lesotho's National Health Training Centre in 1994, 3 established and 27 un-established staff were running 10 courses that were considered to require an establishment of 43 staff[39].

2.5.5 Effects on service delivery, service management and service development

In addition to the obvious effects of loss of skilled health professionals on service delivery, loss of managers sent abroad for continuing education also has a negative effect on service delivery. Facilities are often run by untrained managers, and there is a lack of continuity in management. As a result, service delivery and the development of new services have suffered from the absence of institutional memory and of lessons learnt from experience. These factors may contribute to lack of morale and a poor work ethic.

2.5.6 Shortage of and inequitable distribution of professionals with skills

The shortages resulting from the loss of health professionals can exacerbate the inequitable distribution of staff between urban and rural areas, a phenomenon that also occurs in well endowed countries. Staff are usually concentrated in urban areas and most are unwilling to serve in less accessible areas. In Ghana, for example, there are no obstetricians, psychiatrist, paediatricians or physicians in the three most northern regions that together account for about 35% of the land area and 18% of the population. Overall the most northern region has only 6% of doctors for its 18% of the population[40].

2.5.7 Drain of resources

Nayak[41] has estimated that India has lost some US$ 3.6 to 5.0 billion in terms of the costs of training the estimated 83,000 doctors who have emigrated since 1951, whereas the USA has gained some US$ 26 billion, in respect of its estimated total of 130,000 foreign medical graduates that it has not trained. Similarly in Ghana, estimating tuition costs conservatively at US$ 20,000 per student[41], during the 10 year period 1985-1994, the 61% graduates from one medical school who migrated are estimated to have cost Ghana US$ 5,960,000. When the costs of educating graduates from Ghana's other medical school who migrated and the costs of educating of nurses who migrated to the UK, Jamaica and the USA, are added up, the overall loss could easily be US$ 10 to US$ 15 million over the 10-year period[10].

Such financial losses are occurring in countries least able to afford them and which do not have the resources to effectively tackle their problems of migration. Where more than 10% to 15% of qualified personnel migrate to other countries, these losses may be debilitating[10]. At the same time the need for external experts continues to increase and countries seek to secure technical assistance at high cost, a significant proportion of which is funded from loans.

On the other hand, in purely financial terms, losses need to be seen alongside the remittances that overseas workers often make to their families and dependents at home[10,42]. Such remittances can be substantial and, for some small states, may represent a significant proportion of foreign income.