



Issue

7

# The nursing workforce in sub-Saharan Africa

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**7**

# **The nursing workforce in sub-Saharan Africa**

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The authors alone are responsible for the contents of the report and conclusions.

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Sarah Kibuka was a nurse midwife with special interest in nursing and midwifery education and management. Trained as a Registered Nurse and Certified Midwife at Newcastle General Hospital, United Kingdom, she held a Midwifery Tutors Diploma (MTD) from Makerere University, Uganda, and a master of nursing science from Case Western Reserve University, Ohio, United States of America.

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## Executive Summary

This paper was prepared, at the request of the International Council of Nurses (ICN), as a contribution to its series of papers aimed at addressing nursing workforce issues worldwide.

This paper examines various aspects of the nursing and midwifery workforce in Africa, looking at education and supply systems; recruitment, retention and motivation and career systems. It further investigates attrition from migration and HIV/AIDS, as well as other factors and makes some recommendations on how to move forward using examples of experiences from countries. These experiences, albeit on a small scale, show promise of good results after being scaled up.

Section One provides the regional overview and context of nursing in sub-Saharan Africa (SSA) and points out factors that influence the ability of countries' nursing workforces to cope with their health situations. Some of these factors relate to planning, management, retention and motivation of the nursing workforce, and some also relate to the HIV/AIDS epidemic.

Available data are used to compare countries in the region in terms of nurse:physician ratios and supply per 100,000 of population. The paper looks at the various education and training programmes in some SSA countries. It examines the regulation of nurses and midwives and the key role it plays in addressing nursing workforce shortages through expanding scopes of practice and re-examination of skill mix. The role of gender in nursing is discussed with its influences on the status of nursing and the participation of the profession at the highest health policy decision-making levels. Private sector roles, as investors in the production of nurses and in nurse-based service delivery, are discussed with examples from some countries in the region.

Section Two focuses on the challenges and prospects for the nursing profession. Shortages of nurses and poor retention are addressed in the context of health systems in Africa. Nurse migration, a major factor, is continuing and worsening in some countries. For example, in Zambia, both registered and enrolled nurses (ENs) appear to migrate. Factors that contribute to this migration of nurses are reviewed. These factors are examined as they relate to the challenges raised by health system reform in Africa. The objectives of that reform process in most countries – improving quality, efficiency, cost-effectiveness, coverage and equity in health care – are challenges not readily met when significant health worker shortages persist and emigration continues.

HIV/AIDS is a major challenge to nursing in Africa. The magnitude of its impact on the nursing workforce is still unfolding, and stigma associated with the disease makes it difficult for accurate data to be obtained about its impact on nurses. Findings from Kenya show that HIV/AIDS is affecting the nursing workforce negatively through increased workload, increased patient illness and density, perception of reduced health worker safety in the workplace, and reduced productivity of those nurses who are ill and are frequently absent from work. Deaths among nurses have increased significantly over the past decade, which may be attributable to HIV/AIDS. The absence of adequate workplace programmes for health staff highlights the need to put in place meaningful actions, including counselling and providing anti-retroviral (ARV) treatment for health workers, as well as reinforcing broader policies for Infection Prevention and Control (IPC).

Section Three examines policy opportunities and strategies, including the impact of macro-economic policies on nursing in Africa, and identifies opportunities that new funding mechanisms could generate for health human resources (HHR) if incorporated into Poverty Reduction Strategy Papers (PRSPs) and global disease control initiatives. There is a major role for advocacy and strategic policy development by all key players including national, regional and global organisations, to address the crisis in nursing.

Section Four, entitled "the need for action", highlights some major action areas such as:

- Increasing supply of nurses;
- Improving productivity of the nursing workforce;
- Improving retention and managing migration;
- Motivating nurses and midwives and other health workers;
- Strengthening governance in nursing through regulatory bodies and nursing and midwifery associations, including strengthening of leadership and management capacities in nursing;
- Tackling HIV/AIDS and other welfare issues affecting nurses;
- Developing and strengthening HHR Management Information Systems.

## **Conclusion**

While acknowledging that the challenges in stabilising and sustaining nursing and midwifery services in Africa are enormous and linked to macro-economic and health policy dilemmas, the conclusions are that it is possible to turn the tide on the critical shortage of nurses and midwives in SSA by tackling the challenges effectively. There is need for new thinking in the allocation of resources and investments into the recurrent costs of HHR requirements. Stakeholder consultations are necessary. This should involve wider donor partner and international agencies' participation and support, so that appropriate conditions, and an enabling environment, are created to address the issues and protect the health of the populations in SSA countries.

Urgent interventions are necessary to initiate a reversal in the current nursing shortages; otherwise, attainment of the Millennium Development Goals (MDGs) by 2015 will remain out of reach for most SSA countries.

## Introduction

This paper was prepared, at the request of ICN, as a contribution to a series of papers aimed at addressing nursing workforce issues worldwide. It attempts to provide an overview of the nursing workforce and issues related to it in the sub-Saharan Africa region (SSA). The report covers mainly the profession of nursing, which in Africa is often closely integrated and linked to midwifery. Issues discussed concern both midwifery and nursing, though the references are made mainly to nursing. Where important variations exist, the distinction between the two is made.

The past two decades have seen substantial deterioration in health service indicators in Africa. Sanders et al. (2003) commented on the fact that 17 of 48 countries in the SSA region have experienced decline in life expectancy. This has been due, in large part, to the combined effect of a resurgence of certain communicable diseases and the emergence of new non-communicable disease epidemics. In addition, the HIV/AIDS pandemic has been an obvious contributor to the high disease burden.

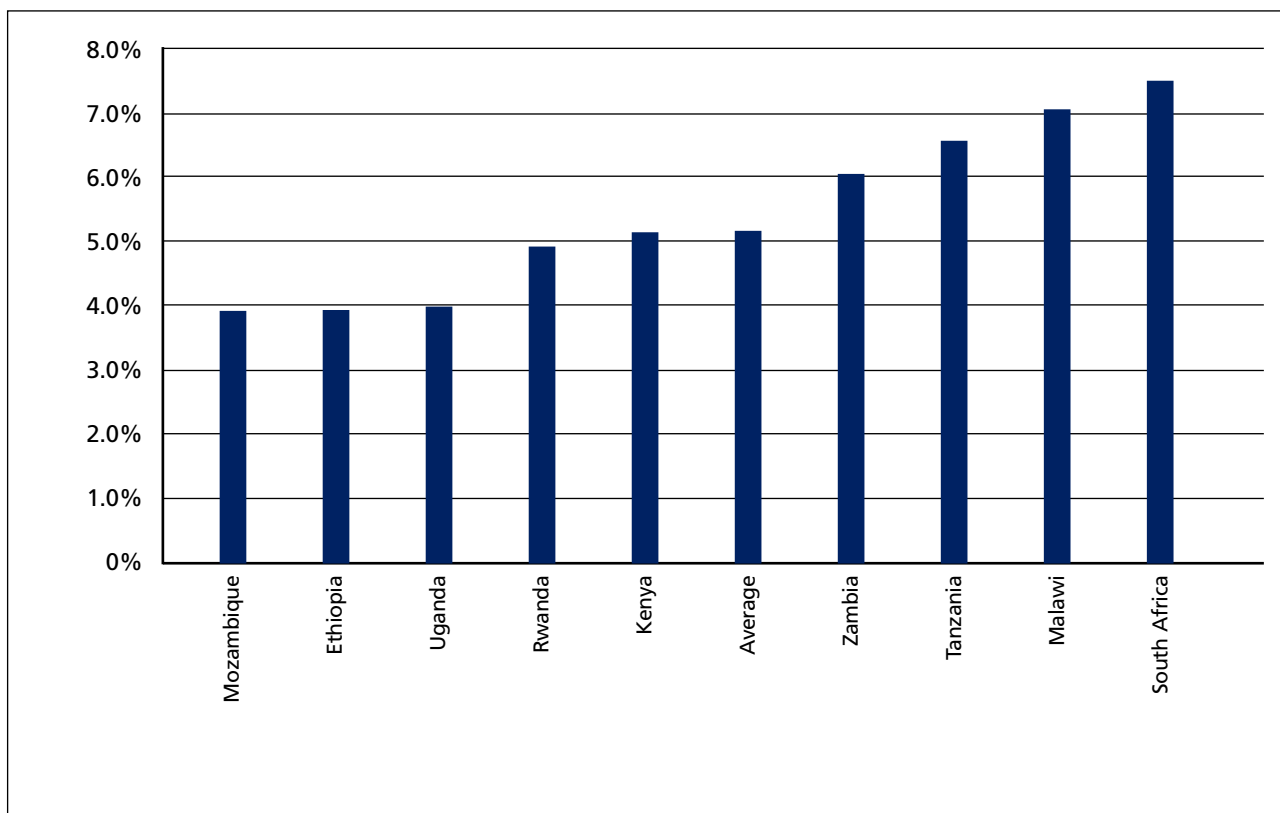
However, a significant underlying and confounding factor is the unparalleled shortage of health professionals, especially nurses and mid-level workers, which the continent faces. The paper examines a series of factors that are responsible for the observed shortage. These include:

- Migration of health workers from SSA, largely to the developed countries;
- A limited supply of new nurses and other health workers coming into the workforce in SSA;
- Poor HHR management systems, which reflect the inefficiencies of the public sector health systems in recruitment, deployment, retention and motivation;
- Attrition due to HIV/AIDS now thought to be affecting health workers in serious numbers;
- Limited career and professional opportunities resulting in frustration and consideration of health professions as undesirable.

In Africa, nurses form a crucial part of the health workforce, and they are possibly the most affected group in terms of the numbers required to correct the deficit. This has an impact on the spectrum of roles that they play, including those of service providers and collaborators (with other professionals), and advocates (supporting client needs), as well as the professional role required in organising and regulating the practice and standards of the profession.

Part of the HHR crisis arises out of the macro-economic situation in which many African countries find themselves, with low levels of investment in the health sector as a whole and its consequent inability to support HHR. African countries' pledges to allocate 15% of national budgets to health have not been met, though some increases have occurred in a few countries (National Health Accounts in Eastern and Southern Africa 2001). Figure 1 illustrates the levels of government investments into health in some African countries.

**Figure 1: Health expenditure as a percentage of Gross Domestic Product (GDP)**



Source: Adapted from National Health Accounts (NHA) in Eastern and Southern Africa (ESA): A Comparative Analysis (2001).

The HIV/AIDS crisis presents a huge challenge to nursing and other health professionals on the continent. The increase in workload, the perceptions of risk associated with the professions and, indeed, the rather high attrition from the workforce thought to be resulting from the epidemic, give major cause for concern.

The waves of health sector reforms and other policy innovations in these countries have generally avoided tackling HHR issues. They have failed to address the crisis even though they are aimed at improving the effectiveness of health systems in delivering services and enhancing health status indicators. There is now very real doubt whether the countries of the SSA region will be able to make any significant gains on the MDGs; especially, in the face of health worker shortages on a continent that already shows the worst availability and density of health workers of any continent or major area on earth.

This paper examines various aspects of the nursing and midwifery workforce in Africa, looking at education and supply systems, recruitment, retention and motivation, including career systems. The paper also investigates workforce attrition from migration and HIV/AIDS, as well as other factors that the professions face. Recommendations are made as to how to move forward based on examples from countries, which albeit of such small scale, show promise of good results after being scaled up.

# Section One: Sub-Saharan Africa Regional Overview and Context

## The disease burden and roles of nurses in the region

The World Health Organization (WHO) estimates that, whilst Africa has 1.3% of the health workforce of the world, it has 25% of the disease burden (WHO 2004). Sanders et al. (2003) indicate a decline in life expectancy in 17 of 48 of SSA countries and point out the combined impact on the workforce brought about by demographic transition, epidemiologic transition and the HIV/AIDS epidemic. This obviously translates into a workload that is unsustainable, that affects productivity and quality of work, and that increases the frustrations of nurses and other health workers, possibly acting as a fuel to their emigration.

The ability of the nursing workforce to cope with the disease burden is influenced by a variety of factors basic to the planning, management and motivation of any workforce. The recruitment and supply of new nurses into the workforce in most Africa countries has been rather limited, with the possible exception of South Africa. The production from training schools has been low, leaving countries with fairly poor availability of nurses. Furthermore, some countries undergoing structural adjustment or similar international financial conditionalities have been unable to recruit nurses into what are largely public sector workforces due to fiscal restrictions. These restrictions are also compounded by inefficient and bureaucratic management systems unable to recruit cadres when needed and permitted.

The nursing workforce in many SSA countries has been further constrained by decisions to remove auxiliary/enrolled/sub-professional cadres. This is believed to have resulted in the removal of a major support section of the workforce, whilst the economies and educational systems of those very countries are still not able to increase the production of the numbers needed and, indeed, to pay for a workforce that is entirely made up of professional level cadres. Another aspect of the situation has been the upsurge in recent years in migration of nurses, as well as other internationally recognised health professionals, which has had both direct quantitative effects as well as indirect effects on the quality and productivity of the workforce. The issue of migration and mobility of nurses will be discussed in more detail later. A further attrition from the workforce is the quite well documented increase in death rates among nursing staff in some countries, particularly among those hardest hit with HIV/AIDS.

Recent work by the Joint Learning Initiative (JLI) proposes that, on average, a health worker density (nurses, midwives and physicians) of about 2.5 per 1,000 population is needed to achieve adequate coverage of health services. The average density in Africa is around 1:1,000; the lowest in the world and, even within this, there is significant variation. The level becomes even lower when wealthier countries such as South Africa, Botswana, etc. are excluded from the data. For example, maternal mortality was found to be the most sensitive to density of health workers and had higher gains from increasing the workforce compared with infant mortality (JLI 2004). These analyses document the importance of an increased supply of nurses in Africa's quest for sustained health status improvements.

Existing in-country staff shortages are exacerbated by major imbalances in the availability of trained nurses. More staff are usually available for urban areas, tertiary health institutions and certain types of services than are typically found in rural areas, peri-urban slums and services such as psychiatry and tuberculosis (TB) treatment. Recently, there were suggestions that midwifery practice had become less popular due to the perceived higher risk of exposure to HIV/AIDS from handling blood during labour. And, in truth, country health systems are still geared more towards clinical services despite policy proclamations of primary health care. The distribution of professionals – including nurses – reflects this tendency.

## Comparisons of the countries in the region

The density of nurses across the region is generally low, although wide variations occur, with countries such as South Africa, Seychelles and Mauritius having much higher than average nurse:population ratios than other countries in the region. The density of nurses in Africa has shown much fluctuation over the decades since 1960. Many countries have shown fluctuations in the almost four decades between 1960 and 1998. Indeed, trends in nurse supply within country workforces for six countries studied by the Regional Office for Africa of WHO (WHO-AFRO) showed as much as 12% decline over a three-year period (Awases et al. 2004). Uganda was the only country that appeared to have expanded its supply of nurses (Table 1).

**Table 1: Trends in nurses' supply in selected countries – AFRO**

Country	Base year data		Target year data		% change
Cameroon	6,000	(1996)	5,800	(2000)	-3.33%
Senegal	2,098	(1993)	1,871	(2000)	-10.39%
South Africa	102,000	(2000)	89,831	(2003)	-11.93%
Uganda	2,673	(1996)	3,264	(2000)	+10.89%
Zimbabwe	8,662	(1996)	7,795	(2000)	-10.00%

Source: Awases et al.(2004).

## Nurse:patient ratios and nurse:physician ratios

Compared to other continents, Africa has generally given comparative priority to producing nurses and has utilised them for a variety of extended purposes, as well as having nurses form the backbone of core health work and professions. In terms of professional mix, the nurse:physician ratio in Africa is generally higher than elsewhere in the world, but particularly higher than in some Middle Eastern and South Asian developing countries (Table 2). The nurse:physician cadre mix ranges from a low of 2.5:1 in Central African Republic to a high of 20:1 in Tanzania. Whilst both professions (physicians and nurses) have been migrating in increasing numbers, rising nurse mobility may begin to erode this status of higher nurses' concentration and negatively affect the already perilous health status indicators of sub-Saharan Africa.

**Table 2: Comparative nurse:physician ratios**

Region	Nurse:physician ratio
Africa	5.5:1
East Asia	4.5:1
Europe	2.4:1
South Asia	2.3:1
Latin America	1.9:1

Source: WHO-AFRO Division of Health Systems (2004).

## In-country imbalances

Internal distribution and availability of nurses and other health professionals is a problem in every country. Rural, peri-urban and inner-city slum areas are usually badly underserved. Within urban areas, tertiary health facilities tend to attract higher qualified health workers; indeed, particular disciplines and services may be unattractive to health providers for various reasons. The distribution of registered nurses (RNs) in the Ghana Health Service favoured the greater Accra region with 18.5% of the population residing there, but having the services of 30.9% of the country's professional nurses. The three northern regions (more rural, on balance, and generally deprived) together contain 18.3% of the population, but have just 15.6% of the country's nurses (Ministry of Health Ghana 2003).

**Table 3: Distribution of Ghana Health Service nurses**

Nurse type	TOTAL	HQ	GAR	VR	ER	CR*	WR	AR	BAR*	NR*	UER*	UWR*
<b>Professional nurses</b>	4,320	28	1,333	305	647	345	353	410	221	287	202	189
%	100%	0.6%	30.9%	7.1%	14.9%	8.0%	8.2%	9.5%	5.1%	6.6%	4.6%	4.4%
<b>Regional populations</b>	18.4m		2.9m	1.6m	2.1m	1.6m	1.8m	3.2m	1.8m	1.85	.92m	.58m
%	100%		15.8%	8.7%	11.4%	8.7%	9.8%	17.4%	9.8%	10.1%	5%	3.2%
Total staff (ALL STAFF)	26,193	544	4,835	2,999	4,130	2,382	2,322	2,832	2,199	1,851	869	1,230
%	100%	2%	18.5%	11.4%	15.7%	9.1%	8.9%	10.8%	8.4%	7.0%	3.3%	4.7%

Note: Teaching Hospitals staff based in GAR and AR not included. CHAG staff (total 5969) not included. The last three regions NR, UWR, UER are the most deprived regions.

Note: 5280 additional CHPS officers required for 110 districts Data not available for CHAG and KBTH, private sector.

\* Deprived regions

Source: Ghana Health Services HRD-HRIS (2003).

### Explanation of the abbreviations in the above table and its notes:

GHS = Ghana Health Service

HRD = Human Resources Directorate

HRIS = Human Resources Information Systems

HQ = Headquarters

GAR = Greater Accra Region

VR = Volta Region

ER = Eastern Region

CR = Central Region

WR = Western Region

AR = Ashanti Region

BAR = Brong Ahafo Region

NR = Northern Region

UER = Upper East Region

UWR = Upper West Region

KBTH = Korle-Bu Teaching Hospital

CHAG = Christian Health Association of Ghana

CHPS = Community-Based Health Planning and Services Delivery

## Education of nurses

Institutionalised nursing and midwifery training in Africa started with the provision of auxiliary assistance in church and mission-related health services. Most formal nurse training programmes started in the 20th century in Africa and intensified during the colonial period when most hospitals ran nurse training programmes. In Anglophone Africa, this trend changed when nurse training gradually became associated with nursing colleges and university training in the 1970s.

The initial training programmes created a lower level of nursing cadre, commonly referred to as "enrolled or auxiliary nurses" with entry requirements generally limited to primary and middle school education. Professional nurse or registered nurse training required completion of high school (12 years of basic education) and three years' professional training, encompassing a higher professional level with more depth of theory and science.

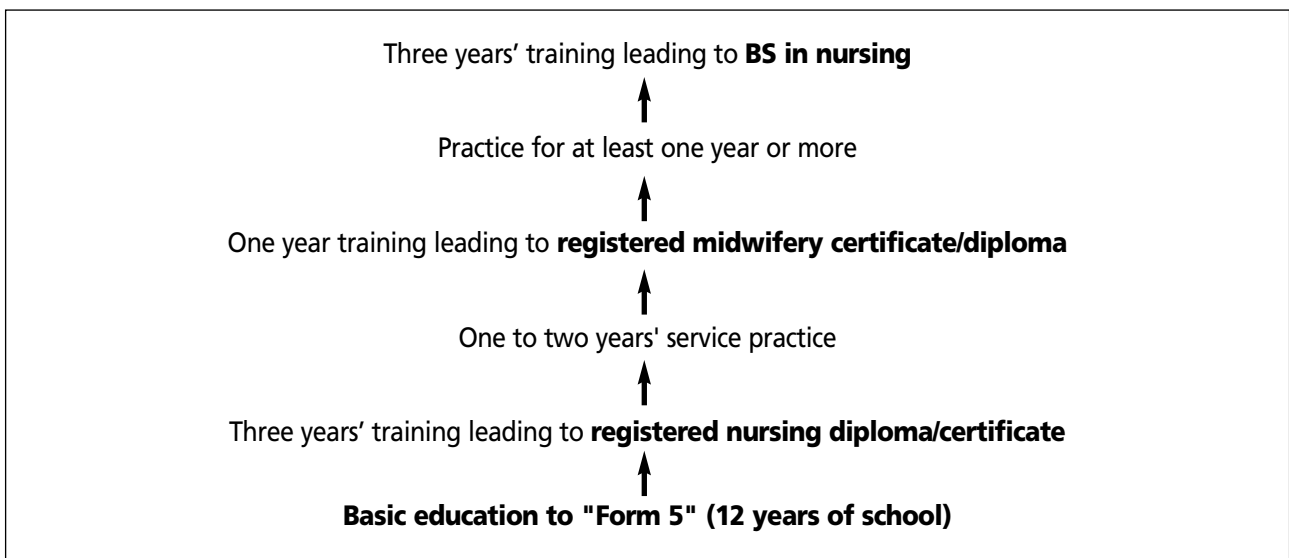
Programmes offering university degrees in nursing emerged more recently. These are generally of two types:

- i A four-year, direct-entry training programme for high school graduates, leading to a bachelor of nursing degree.
- ii A two to three year post basic programme for already qualified registered nurses (RNs), leading to a BS in nursing.

In general, post-secondary school degree, diploma and certificate trained nurses are all "registered" or professional nurses. South Africa has led other African countries in offering master and doctoral programmes in nursing, which are still fairly recent and remain rare in most SSA countries. Faith-based hospitals are still involved in registered and enrolled nurse training in many African countries.

Figure 2 below illustrates one example of nurse training in Zambia.

**Figure 2: Process of nurse education in Zambia – registered (professional) nurses**



Note: Nurses may progress to post-graduate degrees, MS, PhD etc. usually obtained abroad.

The length of nursing and midwifery training is perceived to take too long in some countries. There is also concern about over-training due to numerous overlapping programmes without cross accreditation and recognition. Annexes 4 and 5 summarise the different nurse education formats found among countries in the region, including various basic and post-basic and specialist nursing and midwifery cadres. Some similarities in approach are noted among Anglophone countries. Francophone countries also tend to have similarities in approach, while variations exist between the two language groups. Angola, a Lusophone country, represents yet a different scenario.

After two years of work, nurses within the region are eligible to receive post-basic training and some level of specialisation. This level of training can be focused on clinical nursing, education, administration and management, or community/public health and psychiatric nursing. In some countries, a number of other specialties have been developed. For example, Ghana has post-basic courses in community psychiatry, ophthalmic nursing, anaesthesia, intensive care nursing, operating room nursing, and ear, nose and throat (ENT) nursing.

There is a general perception in sub-Saharan Africa that curricula used in training nurses and midwives are based mainly on a medical model, and are too westernised for nursing and midwifery requirements in Africa. Thus, a major concern is being voiced in various fora that nursing and midwifery in Africa have not responded adequately to the primary health care concept. Training has been hospital-based and seems unable to satisfy community health needs. The balance between theory and practical training has also been questioned and, although some innovative approaches to teaching and learning are being tried out in some countries, concerns still remain about how nursing education could be made more culturally sensitive. Ngcongco (2004), Mogwe (2004) and Mpemi (2004) have examined ways of emphasising the role of communities in training nurses and midwives in community-based and focused programmes. Problem-based learning has been adopted in Zambia, for example, in anticipation that this approach will produce graduates able to cope more effectively with health problems in their countries. Figure 3 below illustrates the approach being used in Zambia.

### **Figure 3: Zambia: Reforming nurse education**

The Zambian and Swedish Governments have a collaborative project involving the Karolinska Institute of Sweden and the Zambian Health Training Institutions. Six health institutions are working with Karolinska to strengthen their capacities by providing fellowships, technical assistance and exchange programmes for teachers and learners, as well as teaching and learning materials/equipment, including computers.

The project is managed by a core team from the General Nursing Council of Zambia, the Ministry of Health, the Central Board of Health, and the Post Basic Nursing Department of the University of Zambia, Chainama Hills College of Health Sciences and the University Teaching Hospital in Lusaka. The project's work programme has six multidisciplinary areas with a group focusing on each area as follows:

1. Problem-Based Learning and Teaching Methodology Development Group.
2. Writers' Group, which develops teaching materials.
3. Training Needs Determination and Curricula Development Group.
4. Research Group.
5. Information Technology Group.
6. Books and Libraries Group.

Source: Personal communications: General Nursing Council of Zambia interviews; Mrs Bertha Chipepo, Training and Education Manager and Acting Registrar; Mrs Dorcas Phiri – Standards and Compliance Manager (interviews held during 2004).

## **Other trends**

The training of nurses in Africa was reviewed recently by Oluoyinka (2004) and this report provides some interesting analysis of nursing education systems in the countries sampled. In 2002, a paper by the University of Natal, a Collaborating Centre with WHO, examined the status of nurse education in Africa. Of 37 sampled countries, 15 used English as the language of instruction in nursing schools, 18 used French and three used Portuguese. The basic school subjects required for nursing entry included Mathematics, Science, Biology and English or French. The number and types of training institutions ranged from hospital-based schools (62), technical and higher education institutions (16) and colleges (7) to universities (14). Nursing programmes were available at basic, post-basic, and degree levels whilst class sizes ranged from 15 to over 40 at basic training levels. It was suggested that, although the number of training schools was fairly substantial, many required more trainers, especially those with higher qualifications. The paper also recommended revisiting policies that restricted entry of eligible candidates into nursing and midwifery training, restrictions that have the impact of limiting supply.

**Table 4 illustrates the numbers of registered nurses in training and outputs in some East, Central and Southern African (ECSA) countries.**

Country	Category	Numbers in training (all classes) 2003	Numbers that graduated			
		2003	2000	2001	2002	2003
Mauritius	Nurses	891	300	176	111	291
	Midwives	101	35	N/A	N/A	N/A
Seychelles	Nurses	99	20	26	31	25
	Midwives	N/A	16	N/A	15	N/A
Tanzania	Nurses	2,400	500	550	550	600
	Midwives	5,200	1,200	1,200	1,250	1,300
Malawi	Nurses	147	49	10	91	20
	Midwives	612	164	169	169	389
Uganda	Nurses	N/A	435	341	542	N/A
	Midwives	N/A	N/A	N/A	N/A	N/A
Zambia	Nurses	728	283	333	326	220
	Midwives	661	337	291	325	452

N/A = not available

Source: Munjanja (2003).

## Regulation of nurses and midwives<sup>1</sup>

Regulation of nursing in Africa takes the usual roles of registration, certification and licensure. These are commonly used in combination so that the system fulfils the needs of both clients and practitioners. The fundamental purpose of regulating nursing and midwifery is the protection of the public. Using the 14 member countries of the ECSA sub-region as an example, 13 have nursing regulatory councils regulating both nursing and midwifery under a single umbrella. Separate committees address specific issues relating to nursing or midwifery in the form of Education and Examinations Committees working under a common Executive Committee combined to service a single Council.

Some variations exist among countries. Zimbabwe initially had a combined Health Professions Council for all the professions but, since 2002, has created a separate Nursing and Midwifery Council. Mozambique, on the other hand, does not have a Nursing Council.

As expected, Nursing and Midwifery Councils are statutory bodies governed by Acts of parliament. Many of the Acts governing nursing and midwifery regulation in Africa have been in place for many years without change and may well be out of step with current requirements. Some countries have reviewed and changed outdated Acts, such as Zambia in 2001 (old act from 1972) and Tanzania, which have made new provisions for periodic re-licensure as opposed to life registration. The Seychelles, however, maintains a system of lifelong registration.

<sup>1</sup> Information on this section was developed from reports presented to the East, Central and Southern Africa Regional Health Community Secretariat. Arusha 2004.

Mechanisms for determining membership to Councils vary. In South Africa, for example, Council members are elected by nurses. In Zambia, the Minister of Health, in consultation with stakeholders, appoints members to the Council for a three-year term of office and the members then elect a President and other office bearers. The appointments must include a representative of the public and a legal counsel. Most Councils function through sub-committees of Council members, which may also involve other nurses and professions.

Generally, Councils in Africa have performed primary functions related to:

- Determining eligibility requirements for entry into the profession.
- Certifying whether practitioners have fulfilled the requirements and are permitted to practice the profession.
- Registering members and periodic renewal of registration and licensure, as required by the country (usually annually or biennially).
- Licensing specific functions and activities of various agencies.
- Developing standards for various components of the profession (e.g. education and practice).
- Inspecting practice premises to ensure that they conform to set standards.
- Dealing with complaints against practitioners.
- Disciplining practitioners who breach standards and/or instituting corrective measures.
- Collaborating with stakeholders and other regulators.
- Providing leadership for proactive policy and planning in regulation (including recruitment and training).
- Researching and monitoring trends and issues in nursing and midwifery.
- Harmonising training across the country and determining core competences.
- Maintaining data and information on the status of nurses and midwives in the country.

Nursing and Midwifery Councils are responsible for regulating the practice of all nurses and midwives, including the sub-professional "enrolled" or "auxiliary" nurses.

## Gender and nursing

The gender of the nurse workforce in SSA is mainly female at service delivery levels, but at top management and policy levels becomes resolutely male in many countries. However, only about 10% of nurses in most countries are male. In Ghana in 1998, 59% of all public sector health staff were female, but only 33% of Ministry of Health headquarters staff were female. Seventeen percent of physicians were female compared to 87.4% of RNs and 90.2% of ENs (Dovlo 1998).

The gender of staff appears to influence their distribution and, hence, access to care provided by qualified nurses. For example, lower female staff ratios were found in the deprived northern regions of Ghana compared to other parts of the country (average of 49% compared with national average of 59%). In Cameroon, Ngufor (1999) also points out the female preponderance in the workforce, but suggests that family and marriage culture limit distribution of female health workers around the country. However, the proportion of women serving in management and headquarters positions is now seen to be increasing in the health sector.

The gender balance among health workers may aggravate the impact of HIV/AIDS on the health workforce. The Joint United Nations Programme on HIV/AIDS (UNAIDS 2004) suggests that, under ordinary circumstances, women are at a higher risk of HIV infection for cultural and biological reasons. A workforce that is largely female, in a country with a high prevalence of HIV, will likely mean that the number of staff reporting sick, absent from work and dying from AIDS will be proportionately higher than a workforce that is in gender balance. In a broader context, women are also the main caregivers in homes and communities, and they are likely to experience more stress from looking after HIV/AIDS patients while on duty, as well as in the homes and communities.

### **Gender and health sector reforms in Uganda**

"The Uganda government's current HR strategy proposals do not address gender issues directly but their emphasis on creating more open career structures is likely to benefit women. Enrolled Nurses are to be upgraded to Registered Nurses/Midwives to enable them to continue providing primary level nursing care. They will be able to develop careers in Public Health nursing. They can now be upgraded to Medical Assistants (who currently are mainly men). Similarly, nursing aides found to be effective may enter enrolled nurse training even though they lacked formal educational qualifications" (Standing et al. 2003:314).

Clearly, Africa needs to organise its workforce in a way that recognises the development and work environment needs of the predominant gender of the health workforce, and in ways that respond to gender issues in communities as well as in the workplace environment.

### **Private roles in nursing**

In nurse education, private involvement takes a number of forms. In one form, students in government training institutions may be sponsored privately (especially at post-basic level); in some cases, schools are run by private non-governmental organisations, especially faith-based ones (as found in Ghana). Recent developments in the face of ongoing shortages and the migration of nurses have opened up lucrative opportunities for the private sector. One result has been increased private sector interest in nursing education, which has major implications for regulation and accreditation to ensure that standards are met. In Uganda, private sector training of nurses is being discussed. Entry qualifications into nursing are under discussion, with the Nursing Council insisting on the basic requirements for entry into nurse training. It may be attractive to consider that enrolled and auxiliary nurses, who can be trained within shorter periods of time and whose entry requirements are less stringent, might become the easiest cadre to produce to address current shortages. However, most nurse leaders advocate strengthening investment into training greater numbers of registered nurses, so as to ensure that nursing services are properly managed and supervised by fully qualified professionals.

In the area of nursing practice, the Acts governing nursing in some countries (such as Zambia) allow nurses to enter private practice.<sup>2</sup> Zambia completed statutory instruments on the broadened scopes of practice and guidelines for certification in 2004 for Nursing Homes, Private Nursing and Midwifery Colleges, Nursing Agencies and Midwifery Practice.<sup>3</sup>

South Africa also allows nurses to engage in private practice. The South African Nursing Council, however, limits itself to registering the nurse or midwife, which permits nurses and midwives to practice in whatever areas they are registered. A nurse wishing to practice privately must register with the Board of Health Funders, which issues a Practice Number.<sup>4</sup> The guidelines for private practice are established by the Democratic Nursing Organisation of South Africa (DENOSA), a nurses' association. On the other hand, Nigeria and Ghana in West African have had private practice for nurses, and especially midwives, for a long time. In Ghana, midwives can run private Maternity Homes, which must be registered with the "Private Hospitals and Maternity Homes Board" – a regulatory body.<sup>5</sup>

<sup>2</sup> The 1997 Nurses and Midwives Act of Zambia

<sup>3</sup> Msidi E (2005). Registrar – General Nursing Council of Zambia , telephone interview: 20 January 2005.

<sup>4</sup> Ramadi G (2005). Deputy Registrar – South Africa Nursing Council , telephone interview: 20 January 2005.

<sup>5</sup> Dovlo D (2004). HR Specialist Ghana, personal communication: January 2004.

The existing Nursing Act in Kenya has no provision for private practice, though a new bill has been tabled to allow for this. Kenyan nurses, however, own private practices registered under the Public Health Act. The nurse must be registered with the Nursing Council and have at least 10 years of work experience. The practitioner must be interviewed by the Nursing Council and have the practice premises inspected before authority to register can be obtained.<sup>6</sup>

<sup>6</sup>Maingi D (2005). Nursing Officer in charge – Standards and Ethics at Kenya Nursing Council, personal communication: 20 January 2005.

## **Section Two: The Challenges and Prospects for Nursing in Africa**

### **Health systems in Africa and nursing**

The profession of nursing in sub-Saharan Africa faces many challenges in strengthening its scientific and professional ethos, as well as meeting the huge demands on core service delivery. These challenges occur in a fast evolving situation of health sector reforms in many countries, coupled with stronger economic, fiscal and efficiency requirements for policy-making in order to meet international finance agencies' requirements. At the same time, health systems on the continent have not performed well and remain very fragile in terms of investment and management and a dearth of the kind of logistics and managerial support that nurses require to perform their role adequately.

The involvement of the health professions, especially nurses, in policy-making and development of health plans requires skills that have often not been part of the spectrum of competencies for senior nurses – their preparation has been more for clinical systems management than for strategic policy development. This has led to the perception – or the reality – of exclusion of nurses from the health sector reform and policy-making processes in some countries. The structure of the health services administration adopted in many countries channelled nurse policy-makers into isolated technical and profession-specific roles, and senior level positions were limited to Chief Nursing Officer or Director of Nursing Services in the health hierarchy.

The evolution of degree nursing, with attendant post-graduate opportunities, offers an opening for developing new nurse leaders with greater involvement in high-level decision-making than ever before, especially in countries where these higher grades did not previously exist. In the past, the lack of realistic HHR policies and planning systems in the health sector has also contributed to situations where the attempts by nurses to enhance the status of the profession (such as through raising the entry requirements into nursing training or removing non-professional categories such as ENs) seemed to work against the strategic interests of the sector.

### **Nursing shortages**

One of the major challenges faced in Africa is the small number of health workers (including nurses) per population as compared to other continents. It is acknowledged that a global shortage of nurses exists but, within this context, the comparative availability of nurses in terms of density per population is very low in Africa. This may be attributable to a rather low production of nurses from training sources; restrictions imposed on the production of enrolled or nurse auxiliary groups; as well as the recent upsurge in the recruitment of nurses to work in more developed countries.

Trends in availability of nurses in some SSA countries clearly show that the numbers are inadequate for the populations in these countries. Data from WHO shown in Annex 1 indicate that the ratio of nurses and physicians per 100,000 population in SSA is 73.4 compared to 737.5 per 100,000 in developed countries and 220.4 per 100,000 in other emerging economies. Key exceptions to these findings are found in some Asian countries, such as India and Vietnam, that traditionally have higher numbers of physicians than nurses.

Indeed, these shortages are likely to have implications for the quality of care delivered. Stone et al. (2004), commenting on nurses' working conditions, identified staffing shortages, especially of nurses, as a major factor constraining hospitals' ability to deal with infection outbreaks.

Table 5 illustrates fluctuations and, in some cases, actual declines in nurse:population ratios in eight low-income African countries. Only four of the eight countries reviewed gained in numbers of nurses in the past decade.

**Table 5: Trends in the availability of nurses 1960 – 1998 in eight low-income countries of SSA [Staff per 100,000 population]**

Country	1960	1975-1977	1988-1992	1992-1998
Burkina Faso	22.9	22.1	24.6	19.6
Cameroon	16.3	44.8	51.2	36.7
Central African Republic	36.2	64.1	18.0	8.8
Ghana	18.4	119	36.4	72.0
Kenya	44.8	89.3	44.8	90.1
Madagascar	32.2	28.2	42	21.6
Tanzania	9.6	36.2	21.9	85.2
Zambia	10.1	51.8	54.0	113.1

Source: Kurowski (2003).

As noted in Table 1, as part of a migration study in 2004, WHO-AFRO (Awases et al. 2004), reviewed the supply of nurses in six countries. Only Uganda showed a positive balance in the supply of nurses between the mid-1990s and early 2000.

Comprehensive data on the output of nurse training schools and programmes were difficult to obtain. However, data from Ghana showed that the country produced registered nurses (the only category produced at that time) at the average rate of 409 nurses per year between 2000 and 2003, which worked out to one new nurse per 49,000 population per year. This represents about half the number of nurses that sought verification each of those years to practice abroad (Dovlo and Martineau 2004). Thus, a huge challenge exists for expanding supply into the nursing workforce, which has to be translated in terms of infrastructure, practical training sites, learning equipment and materials and, perhaps most importantly, the availability of trained and experienced tutors.

Kurowski's (2003) analysis of statistical data on health workers' employment in 183 countries showed that, of the 37 countries with the lowest levels of nurses and midwives in the world, 22 were SSA countries. It was estimated that for Africa to reach health status indicators similar to Latin America's gains (considering same levels of availability of health workers), it would require some 670,000 nurses and 720,000 physicians. These estimates will have huge implications for the training and supply of nurses and midwives in Africa. However, even under these circumstances, many SSA countries have been forced into structural adjustment and are required to downsize the health workforce and freeze employment into the public sector.

## The challenge of retention – mobility of nurses

A key factor contributing to nursing shortages in Africa has been out-migration (emigration) which, though a long-existing phenomenon, has recently become more important as the numbers have increased significantly. Information received from regulatory bodies in ECSA for this paper indicates significant nurse migration continues to occur to the United Kingdom (UK), United States of America (USA), Canada and South Africa. The "top 20" source countries of nurses into the UK include nine SSA countries and the trend shows that the number of new nurses registered in the UK in 2002-2003 was three times that registered in 1998; that is, within a short four year period of time.

**Table 6: Overseas-trained nurses registered in the UK 1998-2003 (excludes those coming from the European Union)**

Country	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003
Australia	1,335	1,209	1,046	1,342	940
Botswana	4	-	87	100	42
Canada	196	130	89	79	53
Ghana	40	74	140	195	255
India	30	96	289	994	1,833
Jordan	3	3	33	49	18
Kenya	19	29	50	155	152
Malawi	1	15	45	75	57
Malaysia	6	52	34	33	27
Mauritius	6	15	41	62	60
New Zealand	527	461	393	443	292
Nigeria	179	208	347	432	524
Pakistan	3	13	44	207	172
Philippines	52	1,052	3,396	7,235	5,594
Singapore	13	47	48	43	25
South Africa	599	1,460	1,086	2,114	1,480
USA	139	168	147	122	89
West Indies	221	425	261	248	57
Zambia	15	40	88	183	135
Zimbabwe	52	221	382	473	493
<b>Total</b>	<b>3,440</b>	<b>5,718</b>	<b>8,046</b>	<b>14,584</b>	<b>12,298</b>

Source: Buchan and Dovlo (2004).

Whilst source country data on migration are difficult to obtain, verification of home country qualification, which is required for professional registration to work abroad, offers an indirect way to monitor migration. The Malawi Nurses and Midwives Council data show that 478 out of a total nurse population of 10,185 (or 4.7%) requested and received verifications in the period from 2000 to mid-2004. Ghanaian verification data showed 3,087 nurses sought to leave the country between 1998 and 2003. However, the number of nurses trained over the period covered only 56% of the number of verifications requested.

**Table 7: Record of verifications sought by Malawi nurses (2000-mid 2004)**

Country	2000–2001	2002	2003	2004	TOTAL
Australia	NBD	0	4	0	4+
Botswana	NBD	3	1	0	4+
Canada	NBD	1	0	0	1+
New Zealand	NBD	5	1	0	6+
South Africa	NBD	7	2	0	9+
Uganda	NBD	0	0	1	1+
UK	NBD	83	90	30	203+
USA	NBD	3	10	5	18+
Zimbabwe	NBD	1	0	1	2+
<b>Total</b>	<b>230*</b>	<b>103</b>	<b>108</b>	<b>37</b>	<b>478</b>

\* Not disaggregated by country  
NBD: No break-down.

Source: Malawi Nurses and Midwives Council (2004).

**Table 8: Ghana Nurses verification: destination country and year**

Destination country	Number per year seeking verification							Total	% of Total
	1998	1999	2000	2001	2002	2003			
Canada	12	13	26	46	33	10	140	5	
South Africa	9	4	3	2	6	-	24	1	
UK	97	265	646	738	405	317	2468	79	
USA	50	42	44	129	81	80	426	14	
Others	4	4	8	8	5	-	29	1	
<b>Total:</b>	<b>172</b>	<b>328</b>	<b>727</b>	<b>923</b>	<b>530</b>	<b>407</b>	<b>3,087</b>	<b>100</b>	
Training Output of Registered General Nurses			386	486	357				

Source: Ghana Nurses and Midwives Council, quoted in Buchan and Dovlo (2004).

**Table 9: Zambia verification records for nurses and midwives (1997-2002)**

<b>Intended destination</b>	<b>RN</b>	<b>EN</b>	<b>Total</b>	<b>%</b>
South African Council	229	195	424	32.7
UK NMC (UKCC)	227	190	417	32.2
Botswana Nursing Council	130	62	192	14.8
New Zealand	58	28	86	6.6
USA	40	16	56	4.3
Namibia	23	15	38	2.9
Zimbabwe	17	9	26	2.0
Australia	20	3	23	1.8
Canada	8	5	13	1.0
All others	10	12	22	1.7
<b>Total</b>	<b>762</b>	<b>535</b>	<b>1,297</b>	<b>100%</b>

Source: General Nursing Council Records (2004).

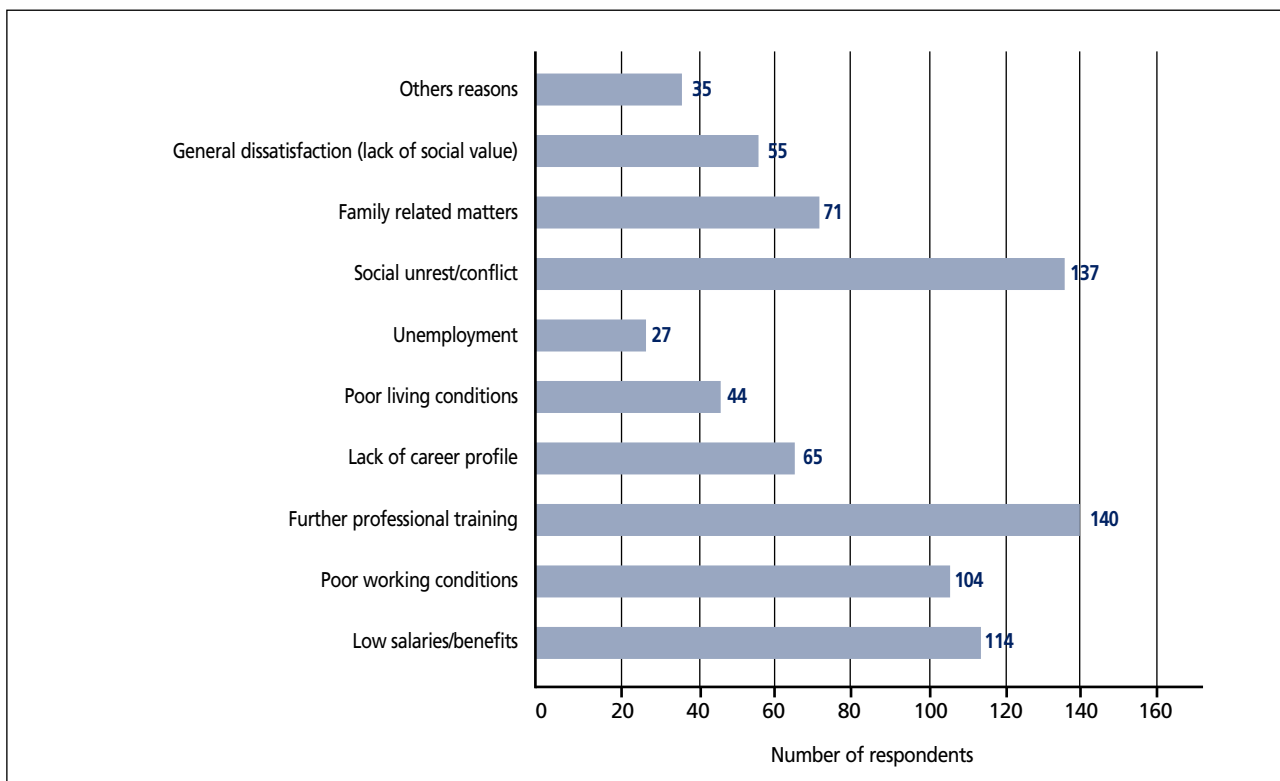
The Zambian example in Table 9 above shows that significant intra-Africa migration also occurs, especially among Southern African countries. Whilst the total numbers that sought verification in Zambia were 1,297 over a six-year period through 2002, a total of 1,009 nurses (844 RNs and 165 ENs) sought verification between January 2003 and June 2004, a period of 18 months.

Nurses and midwives in Africa have also voiced their difficulties and frustrations, which have resulted in a near mass exodus. These frustrations and difficulties have been captured in various meetings, workshops and studies. Notable among these was the 2003 study by WHO-AFRO on migration of health personnel, which highlighted reasons given by health workers for seeking to emigrate (Commonwealth Secretariat 2003, 2004; Commonwealth Regional Health Community Secretariat for ECSA 2003, Dovlo 2003).

The four most frequently recorded reasons were:

- Need for further professional training;
- Social unrest/conflict;
- Low salaries/benefits; and
- Poor working conditions.

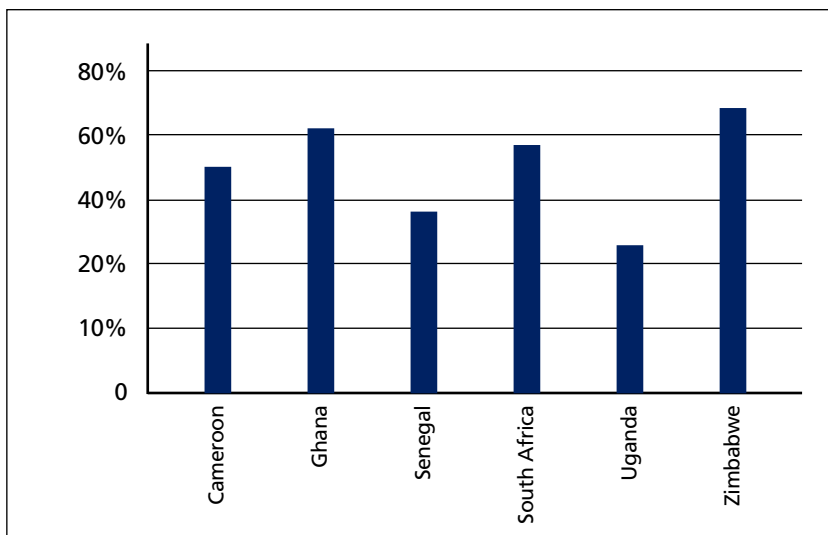
**Figure 4: Reasons for health worker migration, 2003**



Source: WHO-AFRO migration of health personnel (2004).

Intentions to migrate are still very high among health workers all over Africa as seen from certificate verification data and the WHO migration study. Health workers indicated the major "push and pull" factors, which also have relevance for nurses and midwives.

**Figure 5: Health workers who intend to migrate, 2002**



Source: WHO-AFRO (2003).

Pay considerations were the third most frequently mentioned factor by health workers, but when combined with "poor working conditions" (fourth factor) these far outweigh other influences. Levels of pay, as well as the disparities between various professions, form part of a complex motivation scenario. A consultancy report for the Commonwealth Secretariat (Dovlo 1999) illustrated salary differentials between nurses and other health workers, which showed nurses' salaries considerably lower than physicians' for example. Vujicic et al. (2004) showed a more recent comparison of pay levels in African countries using US dollars purchase parity pay (PPP) estimation (Figure 6).

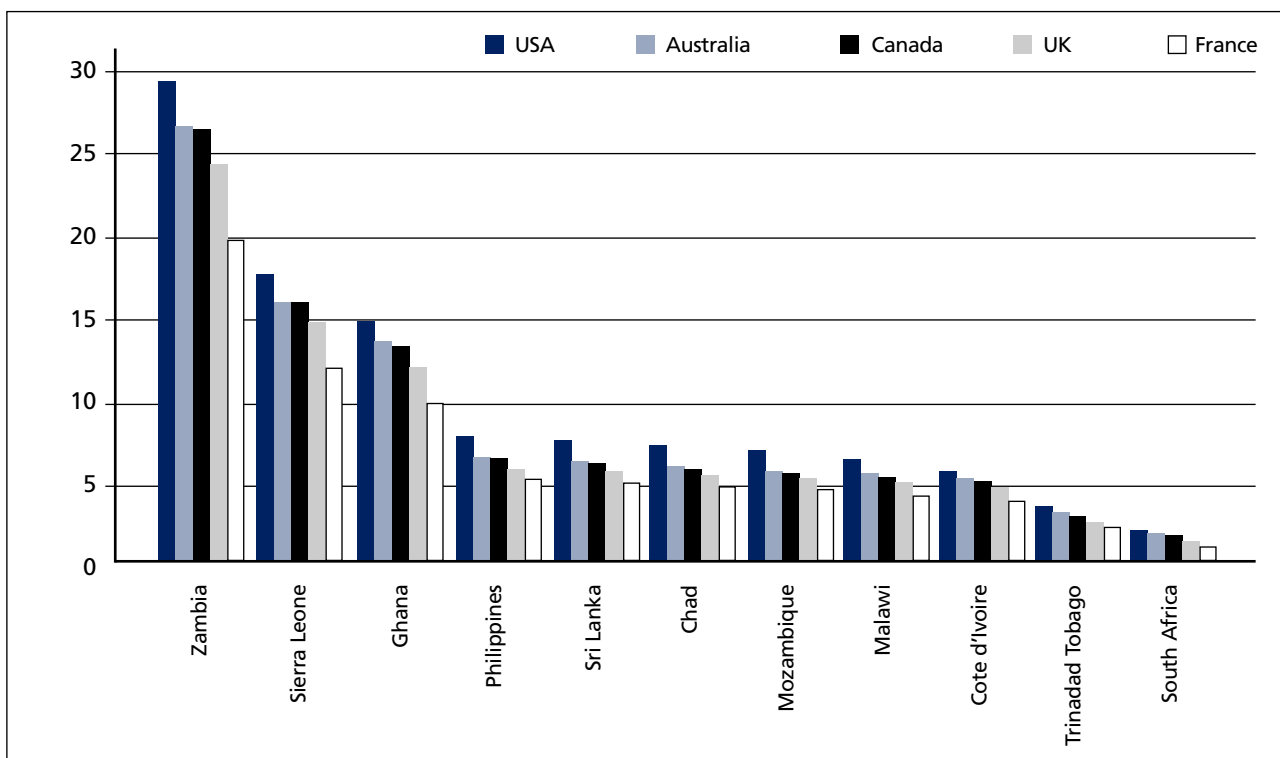
**Figure 6: Purchase Parity Pay (PPP) Comparisons**

Source Countries	US\$PPP Monthly Wage	
	Nurse	Doctor
Chad	\$ 425	\$ 1,050
Cote d'Ivoire	\$ 530	\$ 774
Ghana	\$ 206	\$ 473
Lesotho		\$ 3,379
Malawi	\$ 489	\$ 868
Mozambique	\$ 441	\$ 2,826
Namibia		\$ 2,503
Philippines	\$ 380	
Sierra Leone	\$ 175	\$ 228
South Africa	\$ 1,486	\$ 2,836
Sri Lanka	\$ 407	\$ 1,329
Trinidad & Tobago	\$ 913	\$ 1,514
Uganda	\$ 38	\$ 67
Zambia	\$ 106	\$ 425
<b>Destination Countries</b>		
USA	\$ 3,056	\$ 10,554
U.K.	\$ 2,576	\$ 7,676
France	\$ 2,133	\$ 5,120
Canada	\$ 2,812	\$ 8,472
Australia	\$ 2,832	\$ 5,438

Source: WHO database on health care wages. Quoted in: Vujicic et al. (2004).

The other pay related issue from Vujicic et al. (2004) is the differential that exists between migration source and receiving countries, with Zambia, Sierra Leone and Ghana showing the greatest differential between their salaries and those of major recipient countries, and South Africa, Cote d'Ivoire and Malawi showing the least. However, it is worth noting that mobility intentions in South Africa are almost as high as Ghana's, according to the WHO study.

**Figure 7: Ratio of nurse wages (Purchase Parity Pay [PPP] in US\$), destination country to source country**



Source: Vujicic et al. (2004).

Solving the problem of migration, and the other factors inducing shortages of health workers in Africa, will help meet major health goals, such as the MDGs and the implementation of the WHO 3x5 anti-retroviral treatment initiative. Already Africa is well below the estimated health worker density of 2.5 per 1,000 population needed to meet major service delivery requirements, especially maternal mortality, which appears most sensitive to the availability of nurses, midwives and physicians. The steady departure of the workforce from SSA health services is one of the most compelling challenges facing the health sector.

## HIV/AIDS: A challenge to nursing in Africa

The impact of HIV/AIDS on the nursing and midwifery workforce has been multi-faceted and complex and, without appropriate intervention, will affect the development of health services very negatively. Apart from an increased workload and high needs of acute care HIV patients, nurses and midwives have to cope with the direct effects of HIV on the nursing and midwifery staff, such as increased illness and deaths. The impact of HIV/AIDS creates complex and self-reinforcing negative influences on the health workforce. The heavy workload fuels burnout and frustration, possibly leading to increased migration. Fear of occupational exposure may be reducing entrants into the workforce, as well as encouraging current members to leave. Burnout associated with workload and the intensity of care required is suspected to cause increased absenteeism, and infection among health workers has resulted in significant illness and deaths among the very people tasked with assisting the general

population to fight the epidemic. As far back as 1994, Buve et al. in Zambia showed that mortality rates among female nurses in two hospitals rose from 2 per 1,000 in 1980-85 to 26.7 per 1,000 in 1989-91. Tawfik and Kinoti (2003) note from World Bank projections that a country with a 15% adult sero-prevalence rate for HIV can lose 1.6 to 3.3% of its health care providers from AIDS annually. They further estimated that absenteeism can take up 50% of the work time of a health worker living with AIDS in their final year of life. In Botswana, it was calculated that, if the average infected health worker lost 60 working days in a year, this would translate in the public health sector to the loss of 23,000 person days in 2003 alone (Abt Associates South Africa Inc. 2000)!

Few SSA countries have instituted programmes to cater for health workers' counselling, support and ARV treatment needs. The Zambian Nurses Association is collaborating with the Norwegian Nurses Association in an HIV/AIDS project for nurses and midwives aimed at caring for the carers. The project focuses on the following six areas:

1. Knowledge of HIV/AIDS.
2. HIV/AIDS in the work place.
3. Voluntary counselling and testing.
4. Care and support.
5. HIV prevalence and incidence.
6. Patient care.

The International Council of Nurses and the pharmaceutical firm, Boehringer Ingelheim that supplies Nevirapine, have recently joined this collaboration.<sup>7</sup> This is one of the few initiatives aimed at managing the impact of HIV/AIDS on the health workforce in high prevalence countries, in this case Zambia – a necessity for reducing attrition and improving the productivity of health professionals. The WHO global initiative to treat three million persons with ARVs by 2005 (3x5), the President's Emergency Program for AIDS Relief (PEPFAR) and other global AIDS programmes will, unfortunately, significantly increase the workload of health workers and reduce availability of nurses for routine non-HIV service delivery.

The near absence of health workforce programmes on HIV/AIDS in most SSA countries has further complicated the situation of nurses and midwives in this epidemic. The fear HIV/AIDS has instilled in health workers and the associated stigma have also led to under-reporting of injuries, such as needlesticks, by nurses and midwives.

#### **Needlestick injuries among health workers**

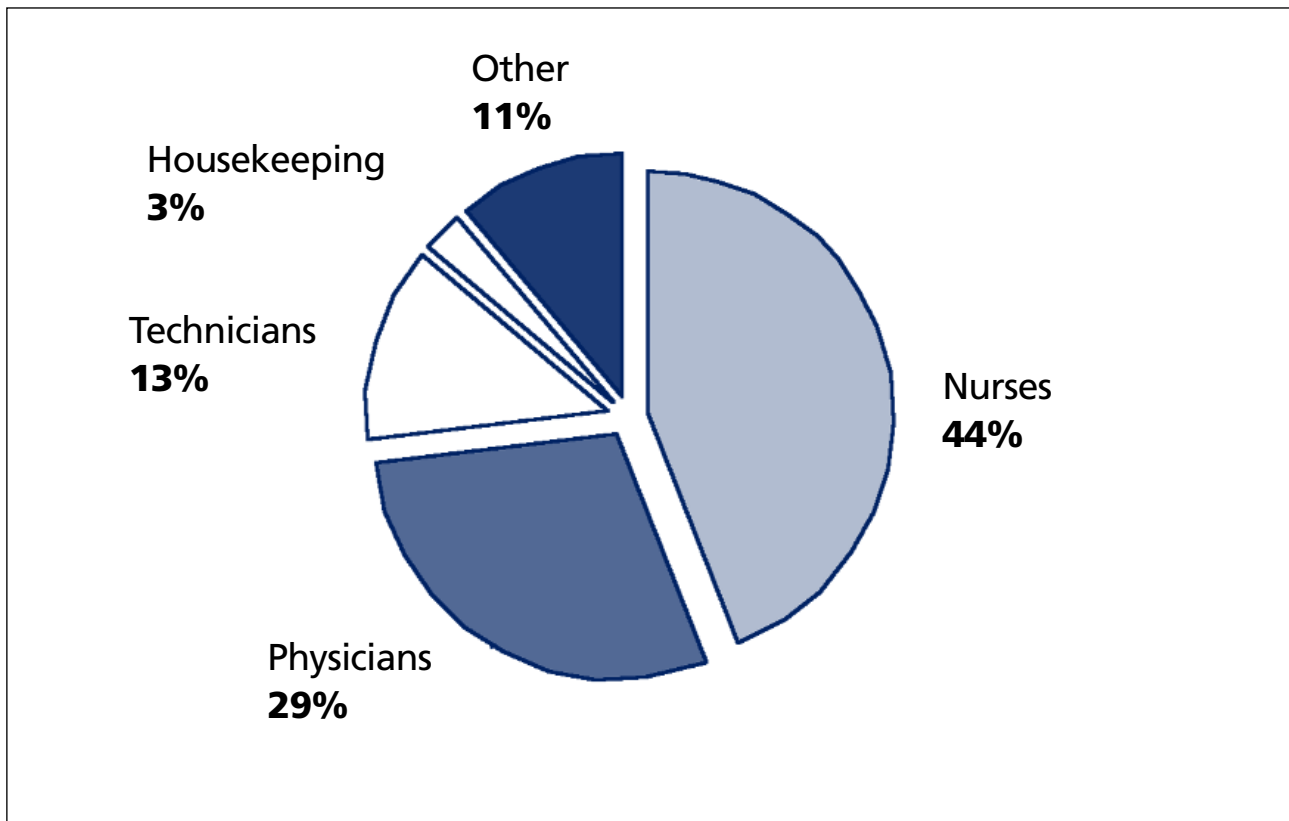
During a discussion on needlestick injuries in an October 2004 workshop on health worker safety in Cape Town, a show of hands indicated that nearly a quarter of the participants had experienced a needlestick injury during their careers as nurses, midwives or physicians. Only two of the six people had reported the injury. One of those two shared the frustrations she underwent as a result and how nothing tangible was done about the injury although that was a number of years back.

Source: ECSA Regional Health Community Secretariat (October 2004).

The importance of occupational protection programmes for health workers gains even more value in the era of HIV/AIDS, and these should be integrated into Infection Prevention and Control Programmes. A study conducted by WHO (2003) indicated that some 5% of HIV/AIDS is transmitted through occupational injuries, and nurses and midwives in Africa face a high risk of being exposed to infected blood and body fluids during work.

<sup>7</sup> Ngandu O (2005). Manager, HIV/AIDS Project for Nurses and Midwives, Zambia, telephone Interview: 4 January 2005.

**Figure 8: Blood and body fluid exposure by personnel category**



Source: National Institute for Occupational Safety and Health in Emerging Infectious Diseases (2004).

The impact of HIV/AIDS on countries' health systems has been studied by some countries as part of regional efforts to collate data on its effects and better appreciate the epidemic's impact on the sector. One such study on Kenya, commissioned by the East Central and Southern Africa (ECSA) Health Community (2003b), illustrates some of the workforce issues faced (see box below).

**The Kenyan Study**

A study by ECSA Health Community and SARA-AED\* in 2003-4 assessed the impact of HIV/AIDS on the health workforce in Kenya. According to Kenyan Ministry of Health data, the health workforce declined in size from 50,504 workers in 1996, to 45,964 in 1999, to 43,270 in 2001. In 2003, there were 1.75 million Kenyans living with HIV/AIDS (National AIDS/STD Control Program). The health system is straining to cope with new and increased pressures including the following:

- **Attrition:** Deaths, resignations and other factors have cumulatively created a shortage of health workers, particularly clinical professionals.
- **Absenteeism:** Absenteeism of health workers is a chronic problem, with an average 15% rate overall, as many workers deal with their own or a family member's illness or attend funerals.
- **AIDS-related workload:** Hospital admissions have steadily increased since 1996, with about half of the cases related to HIV/AIDS. In addition to greater numbers of patients, cases related to HIV/AIDS are more complex, require longer hospital stays and, despite valiant efforts by patient and health workers alike, are more likely to result in death.

\* SARA-AED: Support for Analysis and Research in Africa – Academy of Educational Development

- **Other services:** The existing cadre of health workers is increasingly called upon to assist with such AIDS-related services as voluntary counselling and testing (VCT) and training family members for home-based care.

Deaths accounted for a relatively small percentage of the total leaving service, but that percentage has increased over the past decade. The MOH reported 486 deaths between 1996 and 2001, with the highest number taking place in 1999 (189 deaths) and 2000 (198). More than 200 nurses and 56 clinicians were reported deceased, although the causes of death were not stated. However, more than half were between the ages of 30 and 44. The assessment looked at 327 deaths recorded from 1996 to 2002 in the sampled facilities. Of the 170 that listed a cause of death, 45% of the deaths were due to AIDS and AIDS-related illnesses, including pneumonia, tuberculosis, chronic diarrhoea, and immuno-suppression. Thus, the HIV/AIDS infection rate of the health worker population mirrors that of the general population.

Interestingly, it appears that very little health worker risk of acquiring HIV/AIDS from the workplace is recorded from Africa. Sagoe-Moses et al. (2001) report the paradox of 70% of HIV/AIDS cases occurring in SSA, but only 4% of the world's occupational exposure reported, whilst 4% of HIV cases are found in industrialised countries that report 90% of the world's occupational HIV infection.

East Central and Southern Africa College of Nursing (ECSACON) member countries conducted a series of situation analyses in 1999 – 2000, as reported in unpublished ECSA documents. These analyses revealed that some countries did not have infection prevention and control policies and guidelines, and in countries where policies and guidelines existed they were often not enforced. It is likely that there is a tendency among health workers not to report occupational exposure to infected blood for fear of being stigmatised if tested and found to be already HIV-positive. It is also unlikely that surveillance and reporting of occupational exposure will be popular among nurses and other health workers if no policy exists on post exposure prophylaxis, treatment or compensation.

## **Scaling up health interventions: A challenge for nursing and midwifery practice**

Three of the MDGs are directly related to health: reduction in child mortality; improved maternal health; and combating HIV/AIDS, malaria and other diseases. The adoption of these goals, together with the health crisis in Africa and other parts of the world, has spawned a number of global initiatives and funding arrangements aimed at scaling up health interventions and meeting the MDG targets by the set date of 2015. These initiatives include the Global Fund to Fight HIV/AIDS, TB and Malaria; the Global Alliance for Vaccines and Immunisation (GAVI); The Vaccine Fund (VF); Roll Back Malaria (RBM); Stop TB; the WHO 3x5 Initiative; PEPFAR; the Bill and Melinda Gates Foundation's programmes, etc. All of these will clearly require significant investment of health worker time, skill and motivation to apply these resources effectively and efficiently to meet the goals. However, in Africa, this presents major challenges in terms of scaling up the numbers of health workers available, their training and orientation to undertake these special initiatives, without dismantling basic existing primary health care services. A recent WHO HHR assessment for Zambia indicates that PEPFAR's plans for 10 hospitals will require 13 additional nurses and exclude activities under Global Fund plans in the same hospitals. These requirements pose a real problem in Zambia, where there is already a 48% shortfall in the projected nurses' establishment in the public sector (MoH Lusaka 2004).

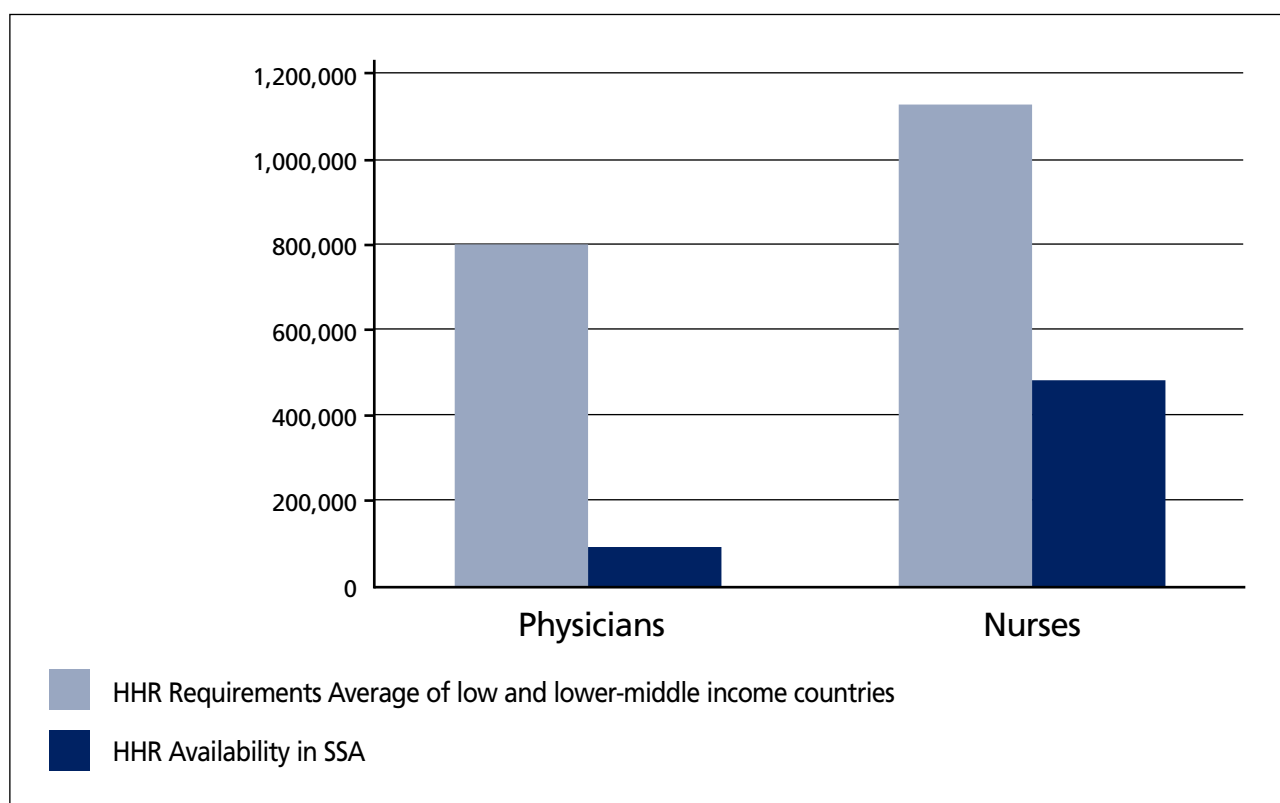
**Table 10: Zambia: Assessment of additional HIV/AIDS related staff needs at 10 hospitals (For "PEPFAR" only – excludes Global Fund needs assessment).**

Staff Category	Physicians	Nurses	Laboratory Technicians	Pharmacists	Counsellors	Total
Additional staff required	26	13	229	100	196	564

Source: MOH/CBOH: Scaling up HIV/AIDS Services: Preliminary HR Plans for 10 Public Hospitals (2004).

Whatever calculations are used, the requirements of nurses and other health workers to meet the necessary health interventions are enormous. The Joint Learning Initiative (JLI) in its report (2004) indicates huge shortfalls when comparing nurse and physician needs to the current availability in SSA. Figure 9 illustrates the magnitude of the shortfalls facing Africa.

**Figure 9: HHR requirements in sub-Saharan Africa**



Source: Kurowski (2003).

Gearing up to meet the challenges illustrated in this section requires concerted effort. It will certainly involve restructuring and enhancing investments in HHR; changing and innovating the configuration and scopes of practice of various health care providers; introducing new cadre types; or enhancing and expanding the skill range of existing cadres. Several countries that previously abolished training of the enrolled nurse (EN) cadre are re-starting or are considering re-starting these cadres to reduce the pressures on registered professional nurses. Producing and retaining the sheer numbers of nurses needed will require innovative thinking and major policy decisions.

A series of priority challenges face nursing in Africa – HIV/AIDS, migration, up-scaling supply, and managing retention and productivity – are almost universal problems in all the countries of the region, including the relatively wealthy ones. Meeting the health MDGs will require major investments in nursing and other HHR development, which should be sustained over time in order for countries to stabilise their service delivery and create momentum for change.

## Section Three: Policy Opportunities and Strategies

### The macro-economics of health: Impact on nursing in Africa

Macro-economic policy goals, often adopted as part of meeting international funding agency requirements, aim at promoting economic growth, increasing employment, stabilising prices and currencies, evolving better balance of payments equilibrium and encouraging balanced budgets in target countries. Frequently, such policies affect income and employment levels, especially in the public governmental sector, often the main source of health service provision in Africa. Fiscal limitations accepted by governments as part of loan conditionalities mean that employment into the sector is frozen and large public sector workforce retrenchments and re-sizing occur. This predictably has a disproportionate affect on the health and education sectors, often the main public sector employers, and hence the focus of most savings in employment cuts.

The impact of these policies has, in some cases, resulted in reductions in the number of health workers employed within these sectors, and the inability of Ministries of Health to recruit new workforce entrants to meet the challenges described in the previous section. Paradoxically, in a good number of these countries, there was unemployment among health workers even as recruitment was restricted or frozen. For example, Tanzania suffered significant drops in the availability of trained health personnel from the public sector between 1994 and 2002, as illustrated in the table below. Currently mid-level nurses constitute 64% of the shortfalls in staffing (Mliga 2004).

**Table 11: Numbers of health employees of different cadres in 1994/1995 compared to 2001/2002**

Designation	Year 1994/ 1995(A)	Year 2001/ 2004 (B)	Difference (B-A)	Deficit
Medical specialists	291	111	-180	184
Medical generalists	899	277	-622	555
Assistant medical officers	508	625	117	1,986
Clinical officers	7,732	5,387	-2,345	5,064
Nursing officers	3,355	3,125	-230	505
Nurse B/MCHA*	12,173	8,127	-4,046	11,165
Health officers	643	457	-186	636
Health assistants	2,142	813	-1,329	-822
<b>All cadres</b>	<b>42,971</b>	<b>35,361</b>	<b>-7,610</b>	<b>-17,390</b>

\*Nurse B (Certificate Nurse): Enrolled Nurse equivalent.  
MCHA (Maternal and Child Health Aid): Certificate Nurse working as an Aid in MCH.

Source: Mliga (2004).

Other translations of these policy issues through Medium Term Expenditure Frameworks (MTEF), Highly Indebted Poor Country Initiatives (HIPC) and the Poverty Reduction Strategies and Policies (PRSP/PRSCs) have generally failed to specifically address the HHR issues paramount to meeting health targets (DFID 2003). However, the past three years have seen renewed interest generated in tackling the HHR crisis, especially in Africa. Governments are finding new ways of meeting the investment challenges facing their weak health systems; resource challenges which are urgently required to meet priority disease targets.

As part of increased awareness about the negative effects of fiscal constraints, African Heads of State agreed in Abuja in 2001 to increase the proportion of country budgets invested in health to 15%. In support of these intentions, they further urged donor countries to raise their international funding support to 0.7% of their Gross National Product (GNP) in order to adequately fund the health sector and fight HIV/AIDS, TB and Malaria (Abuja Declaration 2001).

Despite this commitment made in the Abuja Declaration, almost all countries in the region are struggling to increase expenditure on health. A report on National Health Accounts (NHA) in East, Central and Southern Africa (NHA 2001) shows that, on average, health expenditure stood at 5.4%, with South Africa highest at 7.5% and Ethiopia and Mozambique the lowest at 4%.

It must be remembered that these levels of expenditure are set within situations where actual per capita budgets are generally quite low. This imposes very narrow limits on the countries' ability to improve salaries and incentive packages and to maintain acceptable working environment and infrastructure.

Better targeting of health sector support will be crucial at the macro-economic level. In the past, funding initiatives usually supported disease-specific programmes, but neglected health systems and especially HHR requirements. It is critically important that new fiscal agreements and arrangements should aim at strengthening the ability of the workforce, especially for nursing and midwifery, to meet the challenges. Economic investment in the workforce (through training opportunities, expanding supply into the workforce, improving retention through salary enhancement and improved conditions of service) is essential to mitigate the negative effects of the mobility of nurses on health services in SSA.

## **Advocacy and strategic policy development**

Over the past few years, as the HHR crisis emerged, there has been an increasing number of forums addressing HHR issues, including nurse workforce implications. A number of regional meetings have been held to focus on the HHR crisis in Africa and, in some countries, stakeholder consultations have been held or planned to discuss strategies for addressing the problems. The challenge is how to transform the increased awareness and recognition of need into commitments and concrete actions by countries, but also by regional organisations and international partners. The regional health ministers' meetings, as well as sub-regional gatherings over the past two to three years, have focused on HHR issues and fed their conclusions into international activities such as the JLI.

## **Roles played by regional organisations**

In SSA, WHO's Regional Office for Africa (AFRO) has been providing guidance on health systems and health worker issues. WHO maintains databases on HHR through the periodic returns from member countries although, it must be said, the rate and quality of returns need to be strengthened. WHO, the World Bank and the Rockefeller Foundation supported a meeting in Addis Ababa in 2002 which was one of the initial efforts that directly focused on HHR, identified key issues and became the launch pad for further initiatives (WHO/World Bank 2002). It led to the collaboration that resulted in the JLI, which has a working group focused specifically on problems in Africa.

The ECSA Health Community has also held consultative meetings on HHR, which was also the subject of a Directors Joint Consultative Committee (DJCC) and the 38th Regional ECSA Health Minister's Conference in November 2003, resulting in a number of resolutions on the subject (ECSA 2003). In 2003, WHO–AFRO completed a six-country study on migration of health workers, which has further enlightened stakeholders on HHR issues.

ECSACON is preparing to launch formal training programmes for its members, while the Southern Africa Development Community (SADC) has also been involved in addressing issues of nursing and midwifery shortages. The African Union, through New Partnership for Africa's Development (NEPAD) is also to address HHR issues, and nursing should benefit from some of the interventions under discussion.

## Section Four: A Need for Action

The desperate situation of the health workforce in SSA, and especially the urgent needs of nursing and midwifery in this region, cannot be overstated. Major concerted international, regional and country level actions are needed to meet the serious challenges faced. Without doubt, African countries have made attempts to resolve some of these issues, but the attempts made appear to have been largely inadequate. Most have been on a small scale and lacking sustained investment of resources and policy attention, and they have consequently made little impact on the crisis situation. In addition, the lack of wider international action to target support for salary enhancement and improved conditions of service, for example, to mitigate migration of nurses, makes it difficult for country policies to sustain improvements on behalf of the health workforce. Action by countries must also be seen to be fair by nurses and not found to be inordinately favouring physicians as compared to nurses.

The main area of action needed is in the arena of broad national policies and strategic option assessments. This requires the involvement of all stakeholders, particularly the health professions, especially those wielding the numerical and operational strength (such as nurses) to influence service delivery.

The lack of HHR policies and plans that are integrated into national health policies appears to be widespread. Where they exist, they have not been duly implemented or have been stumped by the lack of wider inter-sectoral dialogue involving, for example, the education and finance ministries. In the following paragraphs, we discuss needed actions in the areas of nurse workforce supply; workforce productivity; retention and management of mobility of nurses and midwives, including incentives and motivation systems. These initiatives in HHR planning and management need to be shaped by a keen recognition of the value that good governance and leadership in health bring to a motivated nursing and midwifery workforce for Africa. They will also be shaped by a choice of strategic options that will mitigate the impact of HIV/AIDS on the health workforce.

### Nurse workforce supply

There is a major need for expanding the numbers of nurses available. Cost effectiveness considerations require careful attention to what countries can afford in terms of the balance in professional and auxiliary cadres. Options for extending scopes of practice will be considered, whilst being alert to sustaining good skills, ethics and quality of care. Introduction of enrolled or auxiliary nurse cadres needs careful stakeholders' consultation from within and outside the nursing profession, which should ensure that these cadres have clearly defined roles and can be well integrated into existing career systems.

Addressing the nursing workforce shortage should take into account yet other factors, such as where student nurses are recruited. For example, rural recruitment may enhance retention and distribution. New approaches in public information and communication are needed to attract potential recruits into the workforce and to establish community mechanisms to support trainees. There is also a potential for sharing training capacity between neighbouring countries, so that excess capacity can be used for training health staff for less endowed countries. Private, faith-based hospitals in countries like Ghana have been involved in nursing training for a long time. More recently, new private schools not linked to missions have been initiated. The regulation and quality control of such schools require careful preparation on the part of governments and regulatory bodies. Some countries have considered soliciting donor country investment in developing training infrastructure and in supporting an expanded intake of student nurses.<sup>8</sup> However, care needs to be taken in ensuring that new imbalances and unsustainable commitments are not created in the nurse education system.

<sup>8</sup> Khumalo T (2005). Personal communication (faxed comments) 14 January 2005.

Any expansion in supply through training must also be linked to addressing retention and motivation issues if this is to work. Some countries in the region that are comparatively wealthy, such as Botswana and Namibia, have tried to recruit from neighbouring countries to meet their shortfalls, but this remains a difficult option for most countries in a region where overall supply is very low. External recruitment from beyond the continent has been tried but mainly with physicians from Cuba.

## **Improving the productivity of the nursing workforce**

In the introduction to this paper, we noted the perception that most curricula for training nurses were inappropriate for the health conditions in Africa, and we highlighted the example of Zambia in reforming its curriculum and training methods. The quality and appropriateness of training will have implications for how productive nurses will become, and the new competency-based and problem-solving curricula are welcome developments. In addition to the pre-service preparation, there is also a need for continuing education that enhances skills and performance. It must be noted, however, that the plethora of health initiatives and programmes often results in multiple in-service workshops and training programmes that may be inequitably distributed among nurses and may even take staff away from their jobs for excessive periods of time. The need is for carefully planned skill updates that involve mostly on-the-job training and do not disrupt the delivery of services. Whilst workshops and in-service training serve as motivation to health workers, unfair distribution of these and a multiplicity of training programmes can induce resentment and frustration.

Use of distance learning and, where feasible, online learning systems using the Internet can help improve skills and productivity of the nursing workforce. Continuing motivation and skill building of nurses can be linked to the new regulatory requirements in some countries for annual or biennial renewal of licensure to practice. In Ghana and Uganda, documented evidence of completed continuing education is required for renewal. This, however, requires that the training opportunities are available and affordable and have credible accreditation systems.

Improved management systems for HHR are required to enhance performance and productivity. Health sector reforms in Africa have included decentralisation of management and, in some cases, de-linkage of health services from the civil service in an effort to improve performance. No evaluations of the outcomes of de-linkage (as tried in Zambia and in Ghana) have been located, although anecdotally the results have been mixed, especially in Zambia, where health worker unions' resistance and other factors have worked against de-linkage.

In Ghana, policy developments to enhance access to services have resulted in efforts to place Community Health Nurses (CHN) in deprived communities and zones and an expansion in the supply of these cadres. The utility of these nurses is closely linked to mobilisation of the community's own efforts towards health and internal generation of resources (MOH 2004).

In Ethiopia, new "health extension workers" will form the basis of extension of services. Nursing associations and regulators will need to engage country policy-makers in evolving linkages between these cadres and the professional nursing workforce, especially in terms of supervision and quality of care.

## Retention and migration management

The almost intractable problems of pay enhancement and migration management are major areas needing a solution, and several countries have reported efforts in this direction. Ghana has tried income enhancements using Additional Duty Hour Allowances and Deprived Area Posting Allowances to provide take-home pay above civil service norms. However, as indicated in Section Two, the pay differentials between Ghana and most migrant health worker destination countries is very high and, thus, these efforts require additional strong non-financial incentive methods to strengthen staff motivation. The non-discriminatory nature of some of these allowances, which are at the same level for each cadre type, can minimise the motivation factor. For example, staff receive the same fixed level of allowance no matter how many extra hours they put in. Botswana provides a 30% salary enhancement scheme aimed specifically at nurses and, last year, the South Africa Department of Health announced its Rural and Scarce Skills allowances that will also benefit many nurses (Tshabalala-Msimang 2004).

### **Rural and scarce skills allowances in South Africa:**

The rural allowance applies to 33,000 full-time health professionals, including professional nurses, working in designated areas. These are areas previously covered by a more limited form of rural allowance; the nodes presently designated in terms of the Integrated Sustainable Rural Development Programme; and areas requested by provincial departments for inclusion. The allowances range from 8% to 22% of annual salary, depending on area and occupational category. The scarce skills allowance applies to 62,000 full-time health professionals in specified categories, regardless of the geographic area in which they work. The categories include medical officers, dentists, medical and dental specialists, pharmacists, radiographers, various types of therapist and nurses specialising in the areas of operating theatre technique, critical or intensive care and oncology. The allowances range from 10% to 15% of annual salary, depending on occupational category. Certain health professionals will, therefore, qualify for both allowances.

Source: Media Release (28 January 2004): Substantial allowances ready to roll for health professionals. Department of Health: Civitas Building, Struben Street, Pretoria, South Africa.

South Africa also operates a Community Service scheme that requires certain professionals to serve in rural communities after graduation and before becoming fully registered to practice. This requirement also can serve a retention purpose.

## Motivating nurses and midwives (and other health workers)

Often, motivation of nurses and midwives has been hinged on monetary incentives and salary inducements which are not able to bridge the gaps between private and public sector pay within countries, and between source and recipient country pay levels. However, the wage differences between source and recipient countries demonstrated by Vujicic et al. (2004) do not necessarily correlate with the rate of intention to migrate found among health workers. For example, monthly "purchase parity pay" for nurses in South Africa and Uganda of US\$ 1,486 and US\$ 38 respectively does not correspond with migration intention rates of 58.3% and 26.1% found for the same countries in the WHO migration study.

Information from the WHO-AFRO migration study and other sources suggest that the role of non-financial incentives is under-rated in many countries. Mathauer and Imhoff (2004) identified a considerable number of non-financial motivators (from case studies in Benin and Kenya) that are composed of awards for group efforts; appropriate sanctions; exposure to new developments through meetings and conferences; team-building activities; and transparent promotion and career schemes. Supportive supervision and performance linked to feedback,

as well as staff participation in decision-making process, were also strong motivators. Benchmarking of performance with some competition among facilities, even when linked to token benefits (such as free time or tea with night duty), was very much appreciated (Mathauer et al. 2004). Dovlo et al. (1998) found that in Ghana (possibly similar in other African countries), the sense of community and social recognition by colleagues during personal and private events such as bereavement or marriage, through participation and support from management and colleagues, provided a sense of belonging and pride, which may play a role in determining loyalty to the organisation. While it was difficult to directly tie this sense of loyalty to performance enhancement and motivation, it was still an important factor in enhancing team spirit. Implementing and sustaining such schemes require management responsibility and transparency from health systems' leaders.

Career progression systems for nurses in Africa have not been well developed and have also lacked adequate numbers of experienced mentors, preceptors and role models. This constitutes an area of frustration for many nurses in Africa; progression to higher qualification and career status is only achieved by abandoning clinical practice and pursuing education or management career tracks.

On the financial side, generally, remuneration and benefit packages for nurses and midwives have not been considered optimal. Where benefits exist and are defined, they are difficult to obtain due to excessive bureaucracy and lack of information and knowledge among nurses. Improving motivation among nurses requires improved organisational and performance management systems that link both financial rewards and intrinsic satisfiers into systems for boosting morale.

## **Governance in nursing**

The professions, through their regulatory councils and associations, continue to define scopes of practice, practice standards, competences, and education core content and standards. In order to strengthen nursing and midwifery, there is need to continually address performance and quality of the nursing workforce at various levels of practice.

National nursing associations have tried to broker favourable conditions of service for nurses and midwives. In most SSA countries, however, the majority of associations are barred from serving as unions and can only address professional issues. South Africa, however, is an example of a country where nurses associations have a strong wing for labour issues and have strong union powers in addition to addressing professional issues. The engagement of nursing associations in policy dialogues and in negotiating HHR policies and conditions of service must be recognised as essential to sustained workforce development.

The role of regulatory bodies in nursing and midwifery has been primarily to provide guidance on practice and education of nurses and midwives, to examine the ethics, conduct and competency of the professionals, as well as to maintain registers of qualified nurses. Regulatory bodies are increasingly a source of data on the status of nurses in their country. Strengthening their information systems to improve the quality of data produced will greatly enhance their effectiveness. Regulatory bodies must play a major role in analysing and supporting crucial health policy decisions involving, for example, reactivation of training of enrolled nurses and introduction of new cadres to ameliorate the crisis. Regulatory bodies must also be involved in discussions on scopes of practice of nurses and midwives and the reconfiguration of the professions to address workforce needs. They must be seen as a support to health systems through effective nursing development and not as protecting professional turfs unnecessarily. There is need to debate the advantages and disadvantages of having Nursing Councils that are parastatal bodies linked to Ministries of Health (as found in most countries in the region) compared with autonomous and independent Councils that receive no government funding as found in South Africa.

## **Tackling HIV/AIDS and other welfare issues affecting nurses**

Securing the nursing workforce from attrition due to HIV/AIDS is critical to all workforce plans. Beyond the treatment plans, such as the project to provide ARVs to nurses in Zambia, there is also the need for countries to exhibit value for its nurses and midwives through further comprehensive occupational health policies and programmes. Programmes or systems need to be established to help nurses look after their regular health problems, as well as any additional problems caused by HIV/AIDS. Furthermore, availability of professional psychological support is needed given the profound change that HIV/AIDS has brought to patient outcomes – shifting professional expectations of cure to those of terminal supportive care. The lack of occupational health services and support systems creates the perception that services provided by nurses are not valued.

## **Development and strengthening of HHR management information systems in SSA**

HHR management information systems, particularly as they relate to nurses and midwives, require urgent strengthening in order to inform policy and planning. The current status of HHR information systems in most SSA countries is not able to support critical decision-making, particularly at this time when countries are experiencing an HHR crisis.

## **Wider cross-systems capacity**

The development and utility of nurses and midwives can only be effective within a health system that is functional. It is important that whilst trying to focus on and address what is a major crisis, the underlying linkages are recognised and engaged to allow for successful interventions. A functional health system within which nurses operate efficiently requires the basic infrastructure and logistics systems for the skills of health workers to be effective. Building strong country leadership and strategies based on technical know-how and wide knowledge networks among countries will establish the foundations for success. Many of these are lacking in SSA and the development of stronger health systems with improved management and governance requires support and assistance well beyond the means of SSA alone.

Perhaps even more important is the need to review and redesign the macro-economic framework within which such poor and fragile countries operate and redesign donor and other investments in ways that protect poor and vulnerable countries. These require a wider global responsibility.

## Conclusions

The challenges to stabilising and sustaining nursing and midwifery services in the Africa region are enormous, and they are linked to the difficult macro-economic and health policy dilemmas facing the countries of the sub-Saharan region.

The critical next steps must involve, first of all, scaling up the training and production of various levels of nurses, in an integrated mix of professionals and auxiliaries that is financially sustainable whilst maintaining good health care results.

Second, the motivation and retention of nurses and midwives have to be tackled through monetary as well as important non-financial incentives. Some of the non-financial incentives revolve around efficient leadership and management systems both within nursing and in health systems in general.

Third, getting serious about the retention of nurses and midwives calls for maintaining the security of the nursing workforce. The systems of welfare and support for nurses should now recognise the changes in care experience that the HIV/AIDS pandemic has brought about. New skill needs of counselling and palliative care of terminally ill clients have become important. There are growing demands on nursing leadership to deal with increasing burnout and low morale of nurses. The suggestion that nurses may now be avoiding working in delivery wards for fear of handling blood is one aspect of this issue. Occupational health systems need to be developed for health workers with counselling and other support systems in place. This should obviously be supplemented with better availability of testing and treatment regimes, and provision of other forms of protection to mitigate attrition due to HIV/AIDS and encourage new entrants into the nursing workforce.

Finally, sustaining the core nursing and midwifery workforce to implement new global initiatives will require new ways of thinking in allocating donor resources. Disease-specific funding initiatives must also be able to respond to core health system needs, health system needs that may have frustrated these initiatives from making an impact, without disrupting other services. It will also be important for financing initiatives to invest in the supply of nurses by funding educational establishments and recruitment of the products of such schools. Donor funds must be flexible enough to co-invest with governments in human capital through supporting the payment of viable salaries in priority areas such as nursing and midwifery practice.

In the short to medium term, the nursing profession will need to support the development of trained sub-professional cadres to provide the numbers and basic skills necessary to meet the MDGs. The economics of most countries in Africa can only sustain a very gradual shift into a fully professional nursing workforce, and enrolled and auxiliary nurses will remain a reality for many countries' health systems.

Thinking through the above issues and strategies requires actions by Nursing Councils and Associations as well as Ministries of Health and, in some countries, Ministries of Education. These actions include strengthening HHR planning and management systems and policy analysis skills. For each country, wide stakeholder consultations are needed to agree on national HHR strategies and the role of the nursing and midwifery professions in implementation. Clearly, inter-country consultations need to be supported and facilitated by regional and sub-regional organisations such as WHO and the ECSA Health Community; agencies that can also support in-country processes with technical assistance and sharing of experiences. These agencies should also be called upon to facilitate inter-country collaboration, particularly in training of nurses and midwives and other health cadres. The gathering and sharing of knowledge and experiences on nurse workforce issues around the region and elsewhere should be a critical role of these agencies.

Wider donor and international agency involvement will help create a more conducive environment for negotiating global issues related to financing health and moderating the effect of international recruitment of nurses from SSA. Greater advocacy and commitment are required beyond voluntary "codes of practice" in order to protect the health services of the poor majority whose care depends predominantly on nurses and midwives.

With 10 years remaining to the target dates of the MDGs, and with deteriorating health status indicators being the norm across the region, it is essential that there be increased numbers of nurses and midwives in SSA countries within the next four to five years (the first few years allowing for the preliminary strategy development and implementation investment). This should be a collective responsibility by all stakeholders in SSA and globally.

To sum this all up, we would like to indicate, as a guide for future work on issues affecting HHR in sub-Saharan Africa, the critical areas we see that call for urgent and strategic attention:

1. Curriculum relevance.
2. Training methodologies.
3. Retention.
4. Staffing models that would allow for decisions on categories, ratios, competencies, curriculum and content to be made meaningfully.
5. Identification and implementation of required changes in regulation.
6. Strengthening of workforce information and management systems as well as supply and demand studies that will inform decision-making.
7. Collective responsibility on the part of both source and destination countries to ensure supply of well-trained nurses in adequate numbers in both the developing and the developed countries.

# Annexes

## Annex 1: WHO estimates of health personnel per 100,000 population for SSA

Country	Physicians*	Nurses*	Midwives**	Pharmacists**
Angola	5.0	114.0	4.3	NA
Benin	10.0	20.0	7.9	NA
Botswana	28.7	241.0	0.0	NA
Burkina Faso	4.0	26.0	3.4	NA
Burundi	0.5	1.0	NA	NA
Cameroon	7.4	36.7	0.5	NA
Cape Verde	17.1	55.8	NA	NA
Central African Rep.	3.5	8.8	4.9	NA
Chad	2.5	15.0	2.3	NA
Congo	25.1	185.1	24.9	NA
Côte d'Ivoire	6.8	44.1	15.0	NA
DR Congo	9.0	31.2	NA	NA
Djibouti	13.0	64.0	NA	2.0
Eritrea	5.1	21.0	2.2	NA
Ethiopia	3.0	6.0	NA	NA
Gambia	3.5	12.5	8.2	NA
Ghana	9.0	64.0	53.2	NA
Guinea	13.0	55.7	5.2	NA
Guinea-Bissau	16.6	109.3	12.7	NA
Kenya	14.1	108.0	NA	NA
Lesotho	7.0	33.0	47.0	NA
Liberia	2.3	5.8	4.3	NA
Libya	120.0	360.0	NA	23.0
Madagascar	8.7	18.8	10.7	NA
Mali	4.4	12.6	3.0	NA
Mauritius	85.0	232.9	NA	NA
Mozambique	2.4	20.5	NA	NA
Namibia	29.1	165.8	116.5	NA
Niger	3.3	23.1	5.5	NA
Nigeria	26.9	66.2	52.4	NA
Sao Tome e Principe	46.7	127.4	29.6	NA
Senegal	10.0	50.0	6.6	NA
Seychelles	132.4	467.6	394.6	NA
Sierra Leone	8.8	90.7	4.7	NA
Somalia	4.0	20.0	NA	0.1
South Africa	25.1	140.0	NA	NA
Sudan	16.0	86.0	NA	1.1
Swaziland	15.1	40.0	NA	NA
Tanzania	4.1	85.2	44.8	NA
Togo	5.6	16.7	10.4	NA
Tunisia	70.0	286.0	NA	17.0
Uganda	4.7	5.6	13.6	NA
Zambia	6.9	113.1	NA	NA
Zimbabwe	5.7	54.1	28.1	NA
Africa Regional Average	25.1	93.5	30.9	NA

Data from Comoros, Gabon, Malawi, Réunion and Rwanda not available at time of preparing this Annex.

\* Source: WHO (2003).

\*\*Source: WHO Statistical Information Service. Figures are from one year between 1994-1998, with the exception of Nigeria for which figures are from 1992. May be accessed at [www.who.int/whosis](http://www.who.int/whosis).

## Annex 2: WHO estimates of health personnel per 100,000 population, averages

Country	Physicians <sup>a</sup>	Nurses <sup>a</sup>	Midwives <sup>b</sup>	Pharmacists <sup>b</sup>
Sub-Saharan Africa average	15.5	73.4	30.9	1.1
SSA without South Africa average	15.2	71.8	30.9	1.1
North African average <sup>c</sup>	108.4	266.2	NA	26.8
<b>Four emerging countries:</b>				
India	51.2	62.9	NA	NA
Korea	180.0	341.0	NA	NA
Singapore	140.0	421.1	NA	NA
Viet Nam	53.8	56.6	17.6	NA
Four emerging countries average	106.3	220.4	NA	NA
<b>Industrialised countries:</b>				
Australia	247.4	769.5	40.0	NA
Canada	187.0	748.0	NA	NA
France	329.7	668.6	21.7	100.0
Germany	363.2	954.8	11.3	57.7
Italy	606.5	446.5	29.2	102.0
Japan	201.5	821.3	18.9	NA
Russia	420.4	793.0	62.5	6.2
UK	164.0	497.0	43.3	58.2
USA	279.0	939.0	NA	NA
Industrialised countries average	311.0	737.5	32.4	64.8

a Source: WHO (2003).

b Source: WHO Statistical Information Service. Figures are from one year between 1994 and 1998 with the exception of India for which figures are from 1992. May be accessed at [www.who.int/whosis](http://www.who.int/whosis).

c Algeria, Egypt, Libya, Morocco and Tunisia.

### Annex 3: Health personnel statistical database – Africa

	GDP (2002) US\$	Income level <sup>a</sup>	Region <sup>b</sup>	Population (2002)	Infant Mortality Rate 1990	Infant Mortality Rate 2000-2002	Physicians per 100,000 (1995-1999)	Year	Nurses per 100,000 (1995-1999)	Year	Midwives per 100,000 (1995-1999)	Year	Dentists per 100,000 (1995-1999)	Year
Algeria	1,657	2	5	31,320,000	42	39	84.6	1995	297.8	1995	N/A	N/A	28.2	1995
Angola	598	1	1	13,896,000	166	154	7.7	1997	114.5	1997	4.3	1997	0	1997
Botswana	4,233	3	1	1,711,800	45	80	23.8	1994	219.1	1994	0	1994	2.2	1994
Burkina Faso	258	1	1	11,831,000	118	104	3.4	1995	19.6	1995	3.4	1995	0.3	1995
Burundi	143	1	1	7,071,000	114	114	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Central African Rep.	348	1	1	3,828,000	115	115	3.5	1995	8.8	1995	4.9	1995	0.2	1995
Chad	248	1	1	8,144,400	118	117	3.3	1994	14.7	1994	2.3	1994	0.2	1994
Congo Dem. Rep.	87	1	1	53,797,000	128	129	6.9	1996	44.2	1996	N/A	N/A	1.1	1996
Congo, Rep	87	1	1	53,797,000	128	129	25.1	1995	185.1	1995	24.9	1995	N/A	N/A
Côte d'Ivoire	712	1	1	16,775,000	100	102	9	1996	31.2	1996	15	1996	N/A	N/A
Equatorial Guinea	1,541	1	1	481,420	122	101	24.6	1996	39.5	1996	2.2	1996	1	1996
Ethiopia	124	1	1	67,335,000	128	116	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gabon	4,405	3	1	1,290,600	60	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gambia, The	370	1	1	1,375,700	103	91	3.5	1997	12.5	1997	8.2	1997	0.5	1997
Ghana	432	1	1	20,071,000	74	57	6.2	1996	72	1996	53.2	1996	0.2	1996
Guinea	628	1	1	7,744,400	145	109	13	1995	55.7	1995	5.2	1995	N/A	N/A
Guinea-Bissau	193	1	1	1,252,700	153	130	16.6	1996	109.4	1996	12.7	1996	0.9	1996
Kenya	325	1	1	31,345,000	63	78	13.2	1995	90.1	1995	N/A	N/A	2.2	1995
Lesotho	577	1	1	2,086,700	102	91	5.4	1995	60.1	1995	47	1995	0.5	1995
Liberia	199	1	1	3,295,100	157	157	2.3	1997	5.9	1997	4.3	1997	0.1	1997
Madagascar	217	1	1	16,437,000	103	84	10.7	1996	21.6	1996	10.7	1996	1	1996
Malawi	162	1	1	10,743,000	146	114	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mali	313	1	1	11,346,000	152	141	4.7	1994	13.1	1994	3	1994	0.1	1994
Mauritania	513	1	1	2,828,000	120	120	13.8	1995	62.4	1995	10.1	1995	2	1995
Mauritius	4,537	3	1	1,212,400	21	17	85	1995	232.9	1995	N/A	N/A	13.5	1995
Mozambique	229	1	1	18,438,000	143	125	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Namibia	2,412	2	1	1,823,200	65	55	29.5	1997	168	1997	116.5	1997	4	1997
Niger	207	1	1	11,542,000	191	156	3.5	1997	22.9	1997	5.5	1997	0.2	1997
Nigeria	248	1	1	132,780,000	114	110	18.5	1992	66.1	1992	52.4	1992	2.6	1992
Rwanda	295	1	1	8,163,000	107	96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Sao Tome e Principe	347	1	1	154,210	69	57	46.7	1996	127.4	1996	29.6	1996	5.2	1996
Senegal	628	1	1	10,007,000	90	79	7.5	1995	22.1	1995	6.6	1995	1.2	1995
Seychelles	5,715	3	1	83,590	17	13	132.4	1996	467.6	1996	394.6	1996	12.2	1996
Sierra Leone	165	1	1	5,235,500	185	182	7.3	1996	33	1996	4.7	1996	0.4	1996
Somalia		1	1	9,390,800	133	133	4	1997	20	1997	N/A	N/A	0.2	1997
South Africa	4,183	2	1	43,580,000	45	56	56.3	1996	471.8	1996	N/A	N/A	17.8	1996
Sudan	356	1	1	32,365,000	75	65	9	1996	58	1996	N/A	N/A	0.7	1996
Swaziland	1,528	2	1	1,088,200	77	106	15.1	1996	N/A	N/A	N/A	N/A	N/A	N/A
Tanzania	204	1	1	35,181,000	102	104	4.1	1995	85.2	1995	44.8	1995	0.7	1995
Togo	324	1	1	4,766,600	88	79	7.6	1995	29.7	1995	10.4	1995	0.7	1995
Uganda	367	1	1	23,395,000	100	79	N/A	N/A	18.7	1996	13.6	1996	0.2	1996
Zambia	410	1	1	10,461,000	108	112	6.9	1995	113.1	1995	N/A	N/A	N/A	N/A
Zimbabwe	522	1	1	12,967,000	53	76	13.9	1995	128.7	1995	28.1	1995	1.3	1995

Source: Kurowski (2003).

#### Annex 4: Nurse categories and education

Country	Nurse type or category	Pre-technical education (i.e., basic schooling)	Basic technical education (nursing)	Comments/remarks
<b>Angola</b>	Basic general nurse	8 years, but must be 16 –18 years old	2.5 years	
	Degree in nursing	8 years, plus 4 years intermediate nursing education	4 years	
	Degree in nursing	4 years intermediate nursing education	4 years	University degree in nursing
<b>Botswana</b>	University advanced diploma in nursing education (B.Ed)	12 years	3 years	Education track only
	Registered nurse (RN)	12 years	3 years	
	Enrolled nurse (EN)	12 years	3 years	
	RN	EN qualification	1-2 years	As upgrade for EN to RN
<b>Burundi</b>	General nurse with: <ul style="list-style-type: none"> <li>● Anaesthesia</li> <li>● Public health services Management</li> <li>● Midwifery</li> </ul>	13 years	2 years	Superior level
	General nurse	10 years	4 years	Basic qualification
<b>Democratic Republic of Congo</b>	Nurse auxiliary	10 years	2 years	
	Diploma in nursing	10 years	4 years	
	Diploma in community nursing	10 years	4 years	
	University basic diploma in nursing	12 years	3 years	
<b>Gambia</b>	State enrolled nurse (SEN)	9-10 years	2 years	
	State registered nurse (SRN)	EN training	2 years	
	SRN	12 years (O Level certificate)	3 years	
<b>Ghana</b>	RN (diploma)	12 years	3 years	
	RN (bachelor's degree)	12 years	4 years	3 years of diploma nursing, plus one year for BSN, B.Ed
	Registered psychiatric nursing (RPN)	12 years	3 years	Also as post-basic (see next category)
	EN	12 years	2 years	Abolished, but may soon be reinstated
	Community health nurse (CHN)	12 years	2 years	
	Registered midwife (RM)	12 years	3 years	Newly started
<b>Malawi</b>	RN (certificate)	12 years	3 years	Training phased out
	RN (diploma)	12 years	3 years	
	EN	12 years	2 years	Training phased out
	Nurse and midwifery technician	12 years	2 years	Replaced EN
	RN	EN or technician qualification	2 years	Upgrading programme for EN and nurse technician
	EN with psychiatric/ community health	EN qualification	1 year	Upgrading programme
<b>Namibia</b>	Comprehensive basic nursing degree	12 years	4 years	
	RN	12 years	3 years	
	EN	10-12 years	2 years	

Country	Nurse type or category	Pre-technical education (i.e., basic schooling)	Basic technical education (nursing)	Comments/remarks
<b>Niger</b>	General nurse	10 years	3 years	Infirmière diplôme d'état
	General midwife	10 years (but age 18)	3 years	Sage femme d'état
	Nursing assistant (NA)	6 years	2 years	
<b>Nigeria</b>	Degree nurse generic bachelor's degree leading to BSN, RN, RM and RPHN (registered public health nurse)	12 years	5 years	
	RN	12 years	3 years	
	RPN	12 years	3 years	
	RM	12 years	3 years	
<b>Rwanda</b>	General nurse	9 years	3 years	
	<ul style="list-style-type: none"> <li>● General nurse</li> <li>● anaesthetic nurse dental nurse</li> <li>● psychiatric nurse</li> <li>● midwife</li> </ul>	12 years	3 years	Superior to other level
<b>Seychelles</b>	General nurse			
	RN diploma	12 years, high school	3 years	
<b>South Africa</b>	Nurse auxilliary	10-12 years	2 years	
	EN	10-12 years	2 years	NA upgrading to EN
	EN	10-12 years	2 years	EN
	RN RN comprehensive basic nursing diploma including: <ul style="list-style-type: none"> <li>● Nursing</li> <li>● Midwifery</li> <li>● Psychiatric nursing</li> <li>● Community health nursing</li> </ul> Leads to degree in nursing - bachelor of nursing – RN, RM, RPN, RCHN.	12 years 12 years	4 years 4 years	
<b>Swaziland</b>	RN diploma	12 yrs of school with 2 science subjects at secondary level	2 years	
	EN	12 years	2 years	
	NA			
	NA	12 years	2 years	
	RN diploma	12 yrs O Level secondary school certificate with credits in Science, Biology, Maths, English and other subjects	3 years	

Country	Nurse type or category	Pre-technical education (i.e., basic schooling)	Basic technical education (nursing)	Comments/remarks
<b>Uganda</b>	NA	Not specified	Not specified	Not a recognised qualification by Council
	EN in:			
	● General nursing			
	● Psychiatry			
	● Midwifery	12 years	Not indicated	ENs can convert to this cadre
	Enrolled comprehensive nurse (ECN) community	10-12 years	2.5 years	
	RN in:			
	● Midwifery			
	● Paediatrics Psychiatry			
	● General Nursing	12 years	3 years	
Registered comprehensive nurse (RCN)	12+ A Levels or 12 years with 5 credits at O Level	3 years		
Degree in nursing		5 years		
<b>Zambia</b>	EN	10-12 years	2 years	
	RN	12 years	3 years	
<b>Zimbabwe</b>	Diploma in registered nursing	12 years	3 years	
	BS in Nursing	12 years with 2 A Level sciences	4 years	
	Primary nurse	12 years	1.5 years	New course

\*Note: Pre-technical education refers to years of basic non-health education (primary and secondary school) required before training. "Basic Technical Education" refers to years of actual professional training.

## Annex 5: Post basic specialist nurse categories and education

Country	Qualification type/ category	Pre-training education (i.e., requirements)	Duration of specialist education
<b>Botswana</b>	Post basic diploma in midwifery	RN qualification	1.5 years
	Post basic diplomas in: <ul style="list-style-type: none"> <li>● Community mental health</li> <li>● Community health</li> <li>● Family nurse practitioner</li> <li>● Anaesthesia</li> </ul>	RN qualification	1 year
	Bachelor's degree in nursing education and administration	RN qualification	3 year
	Master's degree in nursing with: <ul style="list-style-type: none"> <li>● Adult health</li> <li>● Psychiatry</li> <li>● Community health</li> </ul>	B.Ed qualification	1 year
<b>Burundi</b>	Post basic general nurse with: <ul style="list-style-type: none"> <li>● General nursing</li> <li>● Anaesthesia</li> <li>● Management of public health services</li> <li>● Midwifery</li> </ul>	General nurse qualification	2 years
<b>Democratic Republic of Congo</b>	Advanced diploma nurse in nursing administration and other nursing areas	Diploma nurse qualification	3 years
	Advanced diploma in community nurse	Diploma community nurse qualification	3 years
<b>Gambia</b>	Post basic nursing diploma in Midwifery	RN	2 years
	Post basic ophthalmic nursing	RN	1.5 years
	Community nursing	RN	9 months
	Anaesthetic nursing	RN	1 year
	Bachelor's degree in: <ul style="list-style-type: none"> <li>● Nursing midwifery</li> <li>● Surgical nursing</li> <li>● Ophthalmic nursing</li> <li>● Psychiatry nursing</li> <li>● Community nursing</li> <li>● Theatre nursing</li> </ul>	Basic RN Qualification	3 years
<b>Ghana</b>	Post basic nurse diploma in: <ul style="list-style-type: none"> <li>● Critical care operating room</li> <li>● Ophthalmic nursing</li> <li>● ENT nursing</li> <li>● Psychiatric nursing</li> </ul>	RN with 3 year work experience	1.5 years
	Post basic university diploma in: <ul style="list-style-type: none"> <li>● Nursing education</li> <li>● Nursing management</li> </ul>	RN training	2 years
	Master's degree in: <ul style="list-style-type: none"> <li>● Education</li> <li>● Management</li> </ul>	RN + 1st degree, or diploma	2 year Sandwich courses
	RPN	RN training	2 years
	RM (post RN)	12 + RN training	1 year
	RM (post enrolled CHN)	12 + 2 years EN/CHN training	2 years

Country	Qualification type/ category	Pre-training education (i.e., requirements)	Duration of specialist education
<b>Malawi</b>	Post basic RN in: <ul style="list-style-type: none"> <li>● Mental health and psychiatric nursing</li> <li>● Health services management</li> <li>● Nursing education</li> <li>● Community nursing</li> </ul>	Basic RN qualification	2 years
	BS in nursing with: <ul style="list-style-type: none"> <li>● Mental health and psychiatry nursing</li> <li>● Health services management</li> <li>● Nursing education</li> <li>● Community nursing</li> </ul>	Post basic training	2 years
<b>Nigeria</b>	Post basic certificates leading to: <ul style="list-style-type: none"> <li>● General nurse (18-24 months)</li> <li>● Midwife</li> <li>● Psychiatric nurse</li> <li>● Peri-operative nurse</li> <li>● Public health nurse</li> <li>● Orthopaedic nurse</li> <li>● Nurse anaesthetist</li> <li>● Paediatric nurse</li> <li>● Plastic and burns nurse</li> <li>● Accident and emergency nurse</li> <li>● Ophthalmic nurse</li> </ul>	Basic RN training	1-2 years
	Post basic diploma in: <ul style="list-style-type: none"> <li>● Nursing or midwifery education</li> <li>● Public health nursing education</li> <li>● Nursing administration</li> </ul>	Basic RN training	2 years
	Post basic nursing degree with BS in: <ul style="list-style-type: none"> <li>● Nursing education</li> <li>● Nursing administration</li> <li>● Public health nursing</li> </ul>	Basic RN training	3 years
	Fellowship programme in nursing (Fellow of West Africa College of Nursing) as specialists in: <ul style="list-style-type: none"> <li>● Medical/surgical nursing</li> <li>● Mental health/psychiatric nursing</li> <li>● Maternal and child health nursing</li> <li>● Nursing education</li> <li>● Nursing management and administration</li> <li>● Community health nursing</li> </ul>	Post basic nursing qualifications	
	Master's degree in nursing (MN; MS; M.Phil)	5 year generic RN or 3 years post basic qualification	1-2 years
<b>Rwanda</b>	Post basic nurse in: <ul style="list-style-type: none"> <li>● General nursing</li> <li>● Anaesthetic nursing</li> <li>● Dental nursing</li> <li>● Psychiatric nursing</li> <li>● Midwifery</li> </ul>	3 years general nursing training	1 year
<b>Seychelles</b>	Midwifery	RN	1 year midwifery training

Country	Qualification type/ category	Pre-training education (i.e., requirements)	Duration of specialist education
<b>South Africa</b>	<ul style="list-style-type: none"> <li>● Post basic nursing diploma in: Midwifery</li> <li>● Psychiatry</li> <li>● Community nursing</li> <li>● Primary health care</li> <li>● Theatre nursing</li> <li>● Trauma and critical care nursing</li> <li>● Occupational health</li> <li>● Neonatal care</li> </ul>	Comprehensive basic nursing diploma	1 year
	Post basic degree in nursing with bachelor of nursing in <ul style="list-style-type: none"> <li>● Nursing education</li> <li>● Nursing administration</li> </ul>	Comprehensive basic nursing diploma	3 years
	Master's degree in: <ul style="list-style-type: none"> <li>● Adult health</li> <li>● Psychiatry and mental health</li> <li>● Nursing education</li> <li>● Health administration and management</li> <li>● Community health nursing</li> <li>● Trauma and critical care</li> </ul>	Degree in nursing	1-2 years
	Doctoral degree <ul style="list-style-type: none"> <li>● PhD</li> <li>● D Litt and Phil</li> <li>● DS</li> </ul>	Degree/master's	3+ years
<b>Swaziland</b>	Diploma in general nursing	12 years O Level secondary school certificate with credits in Science, Biology, Maths, English and other subjects	3 years
	Diploma in midwifery	General nurse training	1 year
	Diploma in psychiatric nursing	General nurse training	1 year
<b>Uganda</b>	Advanced diploma in public health, nurse/midwifery, nursing education, nursing administration	RN	2 years
	Bachelor's degree in: <ul style="list-style-type: none"> <li>● Nursing</li> <li>● Nursing education</li> <li>● Health services management</li> </ul>	RN	3 years
<b>Zambia</b>	Master's degree in nursing with: <ul style="list-style-type: none"> <li>● Community health nursing</li> <li>● Medical surgical nursing</li> <li>● Psychiatry nursing</li> <li>● Midwifery - for academic and clinical roles</li> </ul>	BS in nursing qualification	1 year
	Degree nurse BS in Nursing with: <ul style="list-style-type: none"> <li>● Community health nursing</li> <li>● Medical and surgical nursing</li> <li>● Psychiatric nursing</li> </ul>	Basic RN qualification	3 years
	Post basic nursing diploma in: <ul style="list-style-type: none"> <li>● Theatre nursing</li> <li>● Psychiatry nursing</li> <li>● Critical care nursing</li> </ul>	Basic RN qualification	1 year
	RM	Basic RN qualification	1 year
	Enrolled midwifery	Basic EN qualification	1 year

Country	Qualification type/ category	Pre-training education (i.e., requirements)	Duration of specialist education
<b>Zimbabwe</b>	Diploma courses in <ul style="list-style-type: none"> <li>● Midwifery</li> <li>● Intensive care</li> <li>● Theatre</li> <li>● Anaesthesia</li> <li>● Psychiatry</li> </ul>	RN + 1 year experience	1 year
	Diploma in administration	RN + 5 years' experience	1 year
	BS in nursing with <ul style="list-style-type: none"> <li>● Nursing education</li> <li>● Community nursing</li> <li>● Mental health and psychiatry nursing</li> </ul>	RN + 2 years' experience	Open University/ Distance learning
	Master's degree in nursing with: <ul style="list-style-type: none"> <li>● Mental health and psychiatry</li> <li>● Medical surgical nursing</li> <li>● Maternal child health and midwifery</li> </ul>	Undergraduate degree in related area + 2 years experience in selected area	1.5 years

Source: Adejumo (2004) and various National Nursing Councils.

## Annex 6.1: Nurse training and education data for selected African countries

Languages used in school and in nursing education (n = 37)						
Country	Same language in school and in nursing education institutions		Language in nursing education			
	Yes	No	English	French	Portuguese	Other
Angola	√				√	
Algeria		√		√		
Benin	√			√		
Botswana	√		√			
Burkina Faso	√			√		
Burundi	√			√		
Cape Verde	√				√	
Central African Rep.	√			√		
Chad	√			√		
Comoros	√			√		
Cote d'Ivoire	√			√		
Dem. Rep of Congo	√			√		
Equatorial Guinea	√					Spanish
Gabon	√			√		
Gambia	√		√			
Guinea Bissau	√				√	
Kenya	√		√			
Lesotho	√		√			
Liberia	√		√			
Madagascar	√			√		
Malawi	√		√			
Mali	√			√		
Mauritius	√			√		
Namibia	√		√			
Niger	√			√		
Nigeria	√		√			
Rwanda	√			√		
Sao Tome e Principe		√		√		
Senegal	√			√		
Seychelles	√		√			
South Africa		√	√			Afrikaans
Swaziland	√		√			
Tanzania	√		√			
Togo	√			√		
Uganda	√		√			
Zambia	√		√			
Zimbabwe	√		√			
<b>Total</b>	<b>34</b>	<b>3</b>	<b>15</b>	<b>18</b>	<b>3</b>	
<b>%</b>	<b>92</b>	<b>8</b>	<b>41</b>	<b>49</b>	<b>8</b>	

Source: School of Nursing, University of Natal (2002).

**Annex 6.2: Age of entry into nurse training (in % of total) for selected African countries**

Country	AGE		
	Up to 20 years	21 – 30 years	31+ years
Angola	60	20	20
Algeria	82	10	8
Benin	2	93	5
Botswana	95	5	0
Burkina Faso	10	85	5
Burundi	1	99	0
Cape Verde	22	70	8
Central Africa Rep.	0	95	5
Chad	3	96	1
Comoros	20	75	5
Cote D'Ivoire	11	85	4
Dem. Rep. of Congo	10	30	60
Equatorial Guinea	10	90	0
Gabon	30	50	20
Gambia	2	95	3
Guinea Bissau	10	90	0
Kenya	100	0	0
Lesotho	75	18	7
Liberia	75	20	5
Madagascar	24	66	11
Malawi	90	10	0
Mali	0	2	98
Mauritius	8	59	23
Namibia	58	34	7
Niger	40	58	2
Nigeria	59	36	5
Rwanda	20	70	10
Sao Tome e Prinicpe	10	90	0
Senegal	3	77	20
Seychelles	98	1	1
South Africa	80	20	0
Swaziland	98	1	1
Tanzania	90	7	3
Togo	2	98	0
Uganda	60	33	7
Zambia	70	25	5
Zimbabwe	90	9	1
<b>Average</b>	<b>41</b>	<b>49</b>	<b>10</b>

Source: School of Nursing, University of Natal (2002).

### Annex 6.3: Nursing education institutions (% of total) for selected African countries

COUNTRY	INSTITUTION			
	Hospitals and Schools	Technical higher education	College	University
Angola	NA	NA	NA	NA
Algeria	0	100	0	0
Benin	100	0	0	0
Botswana	10	90	0	0
Burkina Faso	100	0	0	0
Burundi	100	0	0	0
Cape Verde	100	0	0	0
Central Africa Rep.	50	0	0	50
Chad	NA	NA	NA	NA
Comoros	100	0	0	0
Côte d'Ivoire	0	100	0	0
Dem. Rep. of Congo	90	0	0	10
Equatorial Guinea	0	0	0	100
Gabon	100	0	0	0
Gambia	47	0	53	0
Guinea Bissau	0	100	0	0
Kenya	49	1	NA	50
Lesotho	67	0	33	0
Liberia	50	0	0	50
Madagascar	100	0	0	0
Malawi	75	17	0	8
Mali	0	100	0	0
Mauritius	100	0	0	0
Namibia	0	0	0	100
Niger	NA	NA	NA	NA
Nigeria	97	0	0	3
Rwanda	89	5	NA	NA
Sao Tome e Principe	100	0	0	0
Senegal	80	0	20	0
Seychelles	NA	NA	NA	NA
South Africa	0	0	95	5
Swaziland	0	0	40	60
Tanzania	90	0	0	10
Togo	100	0	0	0
Uganda	85	3	6	6
Zambia	63	11	11	11
Zimbabwe	100	0	0	0
<b>Not Available</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>5</b>
<b>Average</b>	<b>62</b>	<b>16</b>	<b>8</b>	<b>14</b>

Source: School of Nursing, University of Natal (2002).

**Annexe 6.4: Nursing programmes available (n=37) for selected African countries**

COUNTRY	PROGRAMMES							
	Basic		Post-Basic			Degree		
	General Nursing	Midwifery	Management	Education	Clinical	Bachelor's	Master's	Doctorate
Angola	Y	Y	Y	Y	Y	Y	Y	Y
Algeria	Y	Y	Y	Y	Y	N	N	N
Benin	Y	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Botswana	Y	Y	Y	Y	Y	Y	Y	N
Burkina Faso	Y	Y	Y	Y	Y	N/A	N/A	N/A
Burundi	Y	Y	Y	Y	Y	Y	Y	Y
Cape Verde	Y	N	N	N	N	N	N	N
Central African Rep.	Y	Y	N	N	N	N	N	N
Chad	Y	Y	N	N	N	N	N	N
Comoros	Y	Y	Y	Y	N/A	N/A	N/A	N/A
Cote D'Ivoire	Y	Y	Y	Y	N	N	N	N
Democratic Rep. of Congo	Y	Y	N/A	Y	Y	N/A	N/A	N/A
Equatorial Guinea	Y	N	Y	Y	N	N	N	N
Gabon	Y	Y	N/A	N/A	N/A	N/A	N/A	N/A
Gambia	Y	Y	N	N	N	N	N	N
Guinea Bissau	Y	Y	Y	N	N	N	N	N
Kenya	Y	Y	Y	Y	N	Y	N	N
Lesotho	Y	Y	Y	Y	N	N	N	N
Liberia	Y	N/A	N/A	N/A	Y	Y	N/A	N/A
Madagascar	Y	Y	N	Y	N	N	N	N
Malawi	Y	Y	M	Y	Y	Y	N	N
Mali	Y	Y	N	M	N	N	N	N
Mauritius	Y	Y	Y	N	N	N	N	N
Namibia	Y	Y	Y	Y	Y	Y	Y	Y
Niger	Y	Y	Y	N	N	N	N	N
Nigeria	Y	Y	Y	Y	Y	Y	Y	M
Rwanda	Y	Y	N	M	N	N	N	N
Sao Tome	Y	Y	N	N	N	N	N	N
Senegal	Y	Y	N/A	Y	Y	N/A	N/A	N/A
Seychelles	Y	Y	Y	Y	N	N	N	N
South Africa	Y	Y	Y	Y	Y	Y	Y	Y
Swaziland	Y	Y	N/A	N/A	Y	N/A	N/A	N/A
Tanzania	Y	Y	Y	Y	Y	Y	N	N
Togo	Y	Y	N	N	N	N	N	N
Uganda	Y	Y	N	Y	Y	Y	N	N
Zambia	Y	M	N	N	Y	M	N	N
Zimbabwe	Y	Y	Y	Y	Y	Y	Y	N
TOTAL YES	37	34	18	19	17	12	7	4
% YES	100	92	49	51	46	32	19	11
<b>Y = YES</b>	<b>N = NO M = MIXED</b>							

Source: School of Nursing, University of Natal (2002).

### Annex 6.5: Highest qualifications of nurse educators (% of total) for selected African countries

COUNTRY	QUALIFICATIONS				
	Basic Diploma	Diploma + Nurse Educator qualification	Bachelor's	Master's	Doctorate
Angola	85	5	10	0	0
Algeria	N/A	N/A	N/A	N/A	N/A
Benin	2	3	70	5	20
Botswana	0	1	4	95	0
Burkina Faso	40	0	42	18	0
Burundi	87	13	0	0	0
Cape Verde	14	57	27	1	1
Central Africa Rep.	5	90	0	5	0
Chad	50	10	2	2	36
Comoros	0	0	75	5	15
Cote D'Ivoire	0	98	0	2	0
Dem. Rep. of Congo	10	40	10	10	30
Equatorial Guinea	5	5	40	50	0
Gabon	78	15	5	2	0
Gambia	M	M	M	M	M
Guinea Bissau	20	10	70	0	0
Kenya	50	30	15	5	0
Lesotho	6	20	40	32	2
Liberia	0	0	65	25	10
Madagascar	98	1	0	1	0
Malawi	2	2	46	45	5
Mali	20	80	0	0	0
Mauritius	33	25	42	0	0
Namibia	0	6	69	15	9
Niger	3	91	6	0	0
Nigeria	0	46	39	13	2
Rwanda	0	50	0	0	50
Sao Tome	89	11	0	0	0
Senegal	0	50	50	0	0
Seychelles	30	30	10	20	N/A
South Africa	30	57	10	2	1
Swaziland	0	0	43	50	7
Tanzania	0	90	7	3	0
Togo	97	3	0	0	0
Uganda	74	20	4	2	0
Zambia	3	15	82	0	0
Zimbabwe	0	30	50	19	1
Mixed or not available	2	2	2	2	3
<b>Percentage of total</b>	<b>27</b>	<b>29</b>	<b>27</b>	<b>12</b>	<b>6</b>

N/A = Not available                      M = Mixed responses

Source: School of Nursing, University of Natal (2002).

### Annexe 6.6: Classroom group sizes for nurses for selected African countries

Country	Basic		Post basic		
	15 – 40	40+	>10	10-20	20+
Angola		√	N/A	N/A	N/A
Algeria	√				√
Benin		√	N/A	N/A	N/A
Botswana		√		√	
Burkina Faso		√		√	
Burundi	N/A	N/A	N/A	N/A	N/A
Cape Verde	√		N/A	N/A	N/A
Central African Rep	√		N/A	N/A	N/A
Chad		√	N/A	N/A	N/A
Comoros	√			√	
Cote D'Ivoire		√		√	
Dem Rep Of Congo		√			√
Equatorial Guinea	√				√
Gabon		√			√
Gambia	√			√	
Guinea Bissau		√			√
Kenya		√		√	
Lesotho	√			√	
Liberia	√		√		
Madagascar	N/A	N/A	N/A	N/A	N/A
Malawi		√		√	
Mali	√				√
Mauritius		√		√	
Namibia		√	√		
Niger	√		√		
Nigeria		√			√
Rwanda	N/A	N/A			√
Sao Tome e Principe	N/A	N/A	N/A	N/A	N/A
Senegal		√			√
Seychelles	√			√	
South Africa	√			√	
Swaziland	√				√
Tanzania		√			√
Togo	√		N/A	N/A	N/A
Uganda		√			√
Zambia		√			√
Zimbabwe	√				√
N/A	4	4	9	9	9
TOTAL	15	18	3	11	14
%	45	55	11	39	50

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## Abbreviations

3 x 5	Global Initiative Strategic and Operational Framework	DFID	Department for International Development
AC	Audit Commission	DH	Department of Health
ACETERA	Argentinean Civil Association of Non-University Schools of Nursing in Argentina	DJCC	Directors Joint Consultative Committee
ACHIEEN	Chilean Association of Nursing Education	DOT	Directly Observed Treatment
ACOFAEN	Colombian Association of Schools of Nursing	ECN	Enrolled Community Nurse
ADHA	Additional Duty Hour Allowances	ECSA	East, Central and Southern Africa
AEUERA	Argentinean Association of University Schools of Nursing	ECSACON	East, Central and Southern Africa College of Nursing
AFRO	AFRICA Regional Office	ECSA-HC	East, Central and Southern Africa Health Community
AHRQ	American Health Research and Quality	EN	Enrolled Nurse
AHSN	Africa Honour Society for Nurses	EPI	Expanded Programme on Immunisation
ALADEFE	Latin American Association of Faculties and Nursing Schools	EU	European Union
ANA	American Nurses Association	FAE	Argentinean Federation of Nursing
APE	Paraguayan Association of Nursing	FEMAFEN	Mexican Federation of Associations of Schools of Nursing
ARVs	Anti Retroviral drugs	FEPPEN	Pan American Federation of Nursing Professionals
ASEDEFE	Ecuadorian Association of Schools of Nursing	FIM	Functional Independence Measure
ASOVESE	Association of Schools of Nursing of Venezuela	FNHP	Federation of Nurses and Health Professionals (USA)
ASPEFEN	Peruvian Association of Schools of Nursing	FP	Family Planning
AU	Africa Union	FTE	Full-Time Equivalents
AWG	Africa Working Group	FUDEN	Nursing Development Foundation (Spain)
CEDU	Uruguay College of Nurses	GATS	General Agreement on Trade in Services
CHI	Commission for Health Improvement	GAVI	Global Alliance for Vaccines and Immunizations
CHN	Community Health Nurse	GDP	Gross Domestic Product
CHSRF	Canadian Health Services Research Foundation	GNP	Gross National Product
CIPD	Chartered Institute of Personnel and Development	GP	General Practitioner
CM	Community Midwifery	GRNA	Ghana Registered Nurses Association
CN	Community Nursing	HC	Healthcare Commission
CNO	Caribbean Nurses Organization	HIPC	Highly Indebted Poor Countries
COFEN	Federal Council of Nursing, Brazil	HPCA	Health Professionals' Competency Assurance Act
CREM	Mercosur Regional Council of Nursing	HPPD	Hours per Patient Day
CRHCS	Commonwealth Regional Health Community Secretariat	HR	Human Resource
DENOSA	Democratic Nursing Organization of South Africa	HHR	Health Human Resource
		HRM	Human Resource Management
		HSR	Health Sector Reform
		ICN	International Council of Nurses
		ICNP®	International Classification of Nursing Practice
		ICU	Intensive Care Units

IDB	Inter-American Development Bank	PRODEC	Nursing Development Programme in Central America and the Caribbean
IES	Institute for Employment Studies		
ILO	International Labour Office	PRSCs	Poverty Reduction Support Credits
IMR	Infant Mortality Rate	PRSP	Poverty Reduction Strategy Papers
IOM	International Organization for Migration	QA	Quality Assurance
IOM	Institute of Medicine (USA)	RBM	Roll Back Malaria
IPC	Infection, Prevention and Control	RC	Regional Committee
IUCD	Intra Uterine Contraceptive Device	RCHN	Registered Community Health Nurse
IWL	'Improving Working Lives'	REAL	Latin American Nursing Network
JLI	Joint Learning Initiative	RHMC	Regional Health Ministers Conference
LPNs	Licensed Practical Nurses	RM	Registered Midwife
MCH	Maternal and Child Health	RN	Registered Nurse
MDGs	Millennium Development Goals	RPN	Registered Psychiatry Nurse
MMR	Maternal Mortality Rate	RSA	Republic of South Africa
MoH	Ministry of Health	SADC	Southern Africa Development Community
MSF	Médecins Sans Frontières	SANC	South African Nursing Council
MTEF	Medium Term Expenditure Framework	S&T	Science and Technology
NAFTA	North Atlantic Free Trade Agreement	SARA-AED	Support for Analysis and Research in Africa - Academy for Educational Development
NCDs	Non Communicable Diseases		
NDNQI	National Database of Nursing Quality Indicators	SEW	Socio-economic Welfare
NEPAD	New Partnership for Africa's Development	SSA	Sub-Saharan Africa
NGOs	Non-governmental Organisations	TB	Tuberculosis
NHA	National Health Accounts	UAP	Unlicensed Assistive Personnel
NHS	National Health Service	UK	United Kingdom
NNAs	National Nurses Associations	UNAM	Autonomous National University of Mexico
OAS	Organization of American States	UNESCO	United Nations for Education, Science and Culture Organization
OCB	Organisational Citizenship Behaviour	USA	United States of America
OECD	Organization for Economic Co-Operation and Development	UWI	University of West Indies
OPSNs	Outcomes Potentially Sensitive to Nursing	VCT	Voluntary Counselling and Testing
OWWA	Office of Workers Welfare Administration	VF	The Vaccine Fund
PAHO	Pan American Health Organization	WHO	World Health Organization
PBN	Post Basic Nursing		
PDP	Performance Development Plan		
PEPFAR	President's Emergency Program for AIDs Relief		
PHC	Primary Health Care		
POEA	Philippine Overseas Employment Authority		
PPP	Purchase Parity Pay		





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