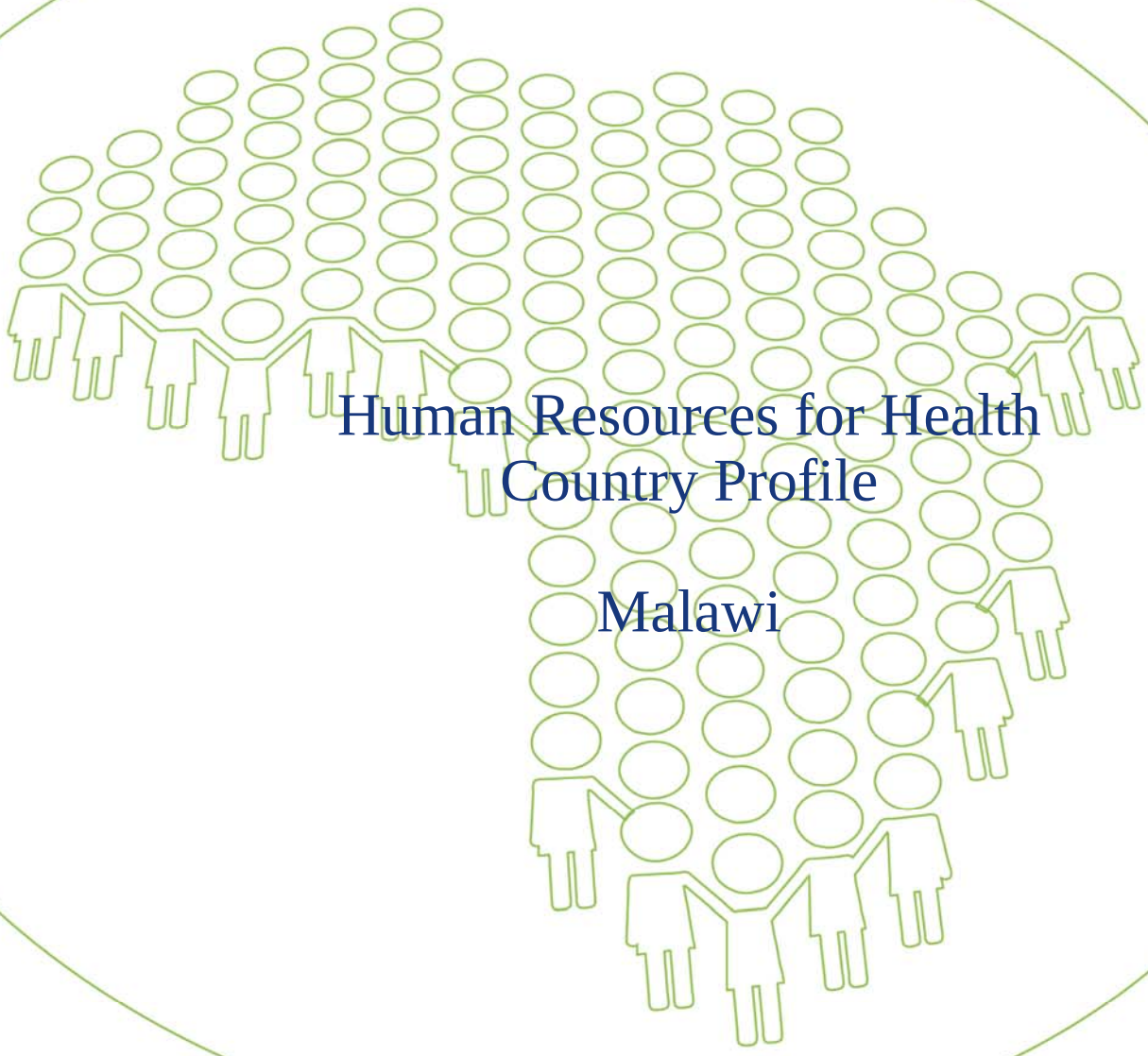

Human Resources for Health Country Profile

Malawi

AHWO

AFRICA HEALTH WORKFORCE OBSERVATORY

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Content

Acronyms

BLM	Banja La Mtsogolo
CCT	Census Coordinating Team
CEZ	Central East Zone
CHAM	Christian Health Association of Malawi
CHSU	Community Health Sciences Unit
CO	Clinical Officer
CSR	Centre for Social Research
CWZ	Central West Zone
DAPP	Develop Aid from People to People
DfID	Department for International Development
DHO	District Health Office(r)
EHP	Essential Health Package
HA	Health Assistant
HMIS	Health Management Information System
HRH	Human Resources for Health
HAS	Health Surveillance Assistant
HSS	Health Systems Strengthening
HTC	HIV Testing and Counselling
HTI	Health Training Institution
JCE	Junior Certificate of Education
KCN	Kamuzu College of Nursing
M&E	Monitoring and Evaluation
MA	Medical Assistant
MACRO	Malawi AIDS Counselling Resource Organization
MDHS	Malawi Demographic and Health Survey
MICS	Multiple Indicators Cluster Survey
MoH	Ministry of Health
MoHP	Ministry of Health and Population
MoLG	Ministry of Local Government
MSCE	Malawi Schools Certificate of Education
N/MW	Nurse/midwife
NAC	National AIDS Commission
NGO	Nongovernmental Organization
NHS	National Health Service
NZ	North Zone
PoW	Programme of Work
PSI	Population Services International
PSLC	Primary School Leaving Certificate
SEZ	South East Zone
SWAp	Sector Wide Approach
SWZ	South West Zone
UN	United Nations

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Executive Summary

Currently, Malawi with support from donors is implementing a 6 year Human Resource Emergency Plan and a 6 year Emergency Pre-service Training Plan as a way of addressing the HRH crisis. In order to address the low remuneration package within Malawi's health sector and consequently improve health workers' retention, the Government of Malawi implemented a 52% salary top-up in April 2005 targeting 11 priority cadres. In addition to salary top-ups, the Ministry of Health has also approved the payment of both monetary and non-monetary incentive packages with the aim of attracting health workers to rural and hard to staff/ reach and underserved areas, which have been jointly identified by CHAM and MoH.

Overall, evidence available indicates that the country has a total of 33,470 health workers with HSAs constituting 30% of all the staff working in the sector. Of the 33,470 health workers, 5,328 (16%) work in the Northern Zone (NZ), 4,628 (14%) work in the central East Zone (CEZ), 8,447 (25%) work in the Central West Zone (CWZ), 7,341 (22%) work in the South East Zone (SEZ) while 7726 (23%) work in the South West Zone (SWZ).

Overall, there are 190 physicians, 2928 Nurses/Midwives in the country, 968 Nurse Technicians, 428 Auxiliary Nurses, 700 Clinical Officers, 707 Medical Assistants, 473 Laboratory Technicians and 211 Dental Assistants.

Introduction

An efficient and effective health-care delivery system largely depends on availability of "carefully planned, effectively trained, equitably distributed and optimally utilised" healthworkers. This in practical terms means the achievement of an optimal balance in employee numbers, skill-mix, staff distribution, deployment and career progression to enhance staff motivation, retention, performance and maximum productivity. To reach prime performance, all actors in HRH management must recognize and value the need to establish the availability and adequacy of the required skills for effective delivery of the National Minimum Health Care Package

Human Resources for Health refer to the people that make things happen in providing health care goods and services. They include all those persons employed by Government, nongovernmental organizations (NGOs) and the private sector in protection and improvement of health. Since the launch of the Health Sector Strategic Plan II, the Ministry of Health together with her cooperating partners have directed their efforts towards increasing the staffing levels in various facilities, improved training capacity for health training institutions to improve the quality and quantity of output as well as providing tools and an enabling environment for improved work performance. These efforts were further enhanced by the Global Health Workforce Alliance (GHWA) Kampala declaration (March 2008) that emphasized the need for collective and sustainable Political, Structural, Systemic and Economic interventions to check the global health workforce crisis.

Purpose

This is a reference document giving HRH situation in Malawi. It is designed to assist health sector managers and policy makers in taking decisions that may require statistical evidence on the current sitution and trend of health workforce in the country. Specifically the purpose of the HRH country profile is to serve as a tool for:

- providing a comprehensive picture of the Health Workforce situation;
- systematically presenting the HRH policies and management situation to help monitoring the HRH stock and trends;
- communication with and between policy-makers and stakeholders;
- strengthening the HRH information system by establishing evidence for baselines and trends;
- facilitating information sharing and cross-country comparisons.

Methodology

This document was written mainly using secondary data obtained from the reports at the Ministry of Health Lilongwe. Information collection was done basically using desk review of the key documents in the line ministries namely, health, local government, finance and education. Other documents came from the Office of the President and Cabinet (OPC). Additional information was obtained from the studies such as those conducted by the MPH students at Malawi College of Medicine. Finally documents on the websites such as Wikipedia and www.nso.malawi.net were reviewed to obtain the current literature on the human resources for health situation in the country.

Scope of the HRH profile

This profile covers the following areas:

- comprehensive picture of the Health Workforce situation in the Malawi
- geography, demography, and economic situation of the country
- country's health services system, its governance and policies
- HRH stock and trends
- HRH production including pre-service and post basic training processes
- HRH utilization.

1. Country Context

1.1 Geography and demography

Malawi is a landlocked country made up of mountains and lakes considered as one of the most scenically attractive countries in Africa. It occupies a land area of approximately 46,066 square miles of which 9,425 square miles are Lake Malawi, Malombe and Chilwa. From North to South the country is 560 miles long and varies in width from 50 to 100 miles. The country is bounded to the East and South-West by Mozambique, to the North-West by Zambia and to the North by Tanzania.

Physically, Malawi is part of the Great Rift Valley of East and Central Africa: (the whole country from North to South is traversed by a deep tough between two parallel faults or cracks in the Earth's crust). Most of this trough is occupied by Lake Malawi. West and South-West of the lake, Malawi stretches on a plateau that stands between 3,000 and 4,000 feet above sea level. Both Lilongwe and Blantyre stand at about 3,500 feet above sea level. The Nyika Plateau in the North rises to over 8,000 feet. The Shire Highlands in the South have an elevation of about 2,500feet, rising to the dramatic mountain masses of Mulanje (10,000 ft) and Zomba (7,000 ft).

Malawi experiences Tropical Climate with three seasons namely, cool–cold and dry (May to mid-August); hot (mid-August to November); rainy (November to April) per year. The variable altitude of the country provides a wide difference in climate. The Lakeshore has longer hot seasons with higher humidity and the temperatures are at their hottest in the lower altitudes of the Shire Valley. The rains are more prolonged in the North. As a rule the temperature decreases and the rainfall increases with altitude.

The cool dry season is very pleasant with landscape initially still green from the rains and daytime temperatures around 15–24^{o}C. For the most part of the days are clear, sunny and warm. In the evenings and night the temperatures drop considerably and can fall to just above freezing. The cold is more marked in higher areas such as Mzuzu in the North and Dedza in the Central. June and July are the coldest months.

The weather begins to warm up in August/September. October and November are the hottest months. Temperatures reach 35^{o}C in Lilongwe and as high as 40–42^{o}C in the Shire low lands and lakeshores.

With the onset of the rains, which usually begin towards the end of November or the beginning of December, the temperatures fall a little, but the days are still hot and humid. The rains are heaviest in the first few months, diminishing in March. Rainfall mostly consists of tropical downpours of short duration but occasionally of persistent drizzle with overcast skies. Humidity can be as much as 80% in the height of the rainy season and more on the lakeshore. It rains very occasionally during the two dry seasons but generally wet weather is very rare from May to October.

Population composition

According to the 1998 population and Housing census, the population is projected at 13.6 million in 2008. The Welfare Monitoring Survey conducted in 2006 shows that Malawi has a young population as almost half of the population is under 15 years (47%), and 49% is between 15–64 age group. Slightly fewer males than females: 98 males for every 100 females. Malawi has a dependency ratio (under 15 + 65 and above as ratio of 15–64) of 1.02. The survey also shows that the adult literacy rate is 66 percent (Table 1.1).

Table 1.1 Per cent population distribution by age group and year

Age group	2006
0–4 years	47%
15–64 years	49%
65+ years	4%
Total	100.0%
Total population	13 187 632

Source: Monitoring Survey 2006 & HRH Census 2008.

Table 1.2 Population distribution by sex

Year	Total	Male	Female	Male/Female (%)	Growth rate (%)
2008	13 066 320	6 365 771	6 700 549	95%	2.8%
2002	11 174 648	5 240 909	5 933 739	88.3%	3.3%
2001	10 816 294	5 256 718	5 559 576	94.5%	3.3%
1998	9 933 868	5 245 082	4 688 786	111.8%	2.0%

Source: MDHS 2004, Population and Housing Census 2008.

1.2 Economic context

The Government of Malawi developed Malawi Growth and Development Strategy (MGDS) whose emphasis is to rebalance government expenditure from social to economic sectors. The MGDS highlights six focus areas where government will concentrate its efforts: agriculture and food security; infrastructure development; irrigation and water development; energy generation and supply; integrated rural development; and prevention and management of HIV and AIDS.[1] The MGDS recognizes that spending towards services ought not to be seen as an end in itself.[2]

Available literature indicates that traditionally Malawi has been self-sufficient in its staple food. During the 1980s the country exported substantial quantities of food to its drought-stricken neighbours. Agriculture represents 38.6% of the GDP, accounts for over 80% of the labour force, and represents about 80% of all exports.[3]

It is further reported that nearly 90% of the population engages in subsistence farming. Smallholder farmers produce a variety of crops, including maize (corn), beans, rice, cassava, tobacco, groundnuts (peanuts) and coffee. Information available further indicates that the agricultural sector contributes about 63.7% of total income for the rural population, 65% of manufacturing sector's raw materials, and approximately 87% of total employment.[4] Reports show that real GDP increased by an estimated 3.9% in 2004, from 4.3% in 2003 and 2.4% in 2002. Inflation has been largely under control since 2003, averaging 10% in that year and 11.1% (est.) in 2004. Discount and commercial lending rates also declined from 40%–45% in 2003 to 25% in early 2004. The Kwacha slid from 90 to 101 against the US dollar in mid-2003 and was at 108 to the US dollar at the end of 2004.[5]

[1] Ministry of Finance; Malawi Public Expenditure Review 2006.
[2] Haacker, Marcus (2003), Providing Health Care to HIV Patients in Southern Africa. IMF; Policy Discussion Paper.
[3] Website: www.en.wikipedia.org
[4] Malawi Website: www.en.wikipedia.org
[5] Malawi Website: www.en.wikipedia.org

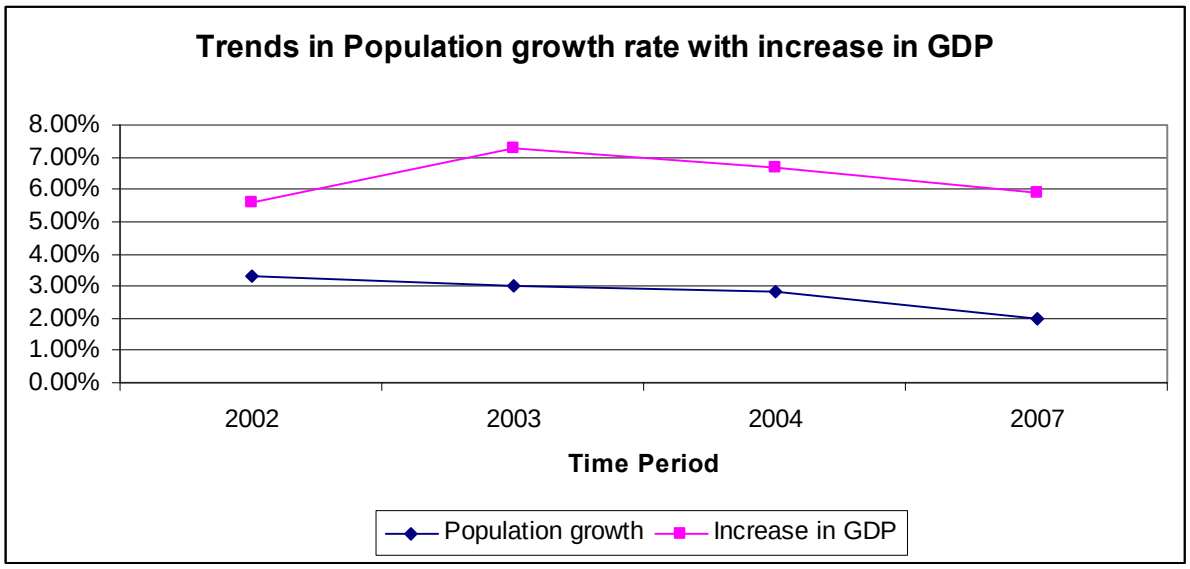
Ministry of Finance (2006) reported that measures have been introduced to strengthen budget preparation and execution including pay roll management. Progress has been made in improving the coverage of donor support, thus improving the comprehensiveness of the budget starting 2006.[6]

Table 1.3 Economic indicators

Indicators	2000	2004	2006
GDP	$ 1.77 bn	-	$8.272 bn
National Debt as % of GDP	-	-	39.4%
Economic Aid as % of GDP	60%	-	-
Proportion of Budget spent on health as % of GDP	12%	-	-
Income per capita (in PPP)	-	-	$ 800
Proportion of population living below poverty line	65.3%	53%	-
Proportion of population with malnutrition	49%[7]	-	-
Unemployment rate	N/A	N/A	N/A
Inflation rate	10%	11.1%	14%

Source: Ministry of Health POW (2004), Wikipedia, 2009.

Figure 1.1 Trends of Population growth rate and economic growth rate (2002–2007)



Source: MDHS, 2004

As early as 1994, the Malawi government adopted the National Population Policy, which was designed to reduce population growth to a level compatible with Malawi's social and economic goals (OPC, 1994). The Policy's objectives are to improve family planning and health care programmes, to increase school enrolment with an emphasis on raising the proportion of female students to 50% of total enrolments, and to increase employment opportunities, particularly in the private sector (MDHS 2004).

[6] Malawi Public Expenditure review.
[7] This percentage is for children under five years (NSO 2001)

1.3 Political context

The Government of Malawi (GoM) like many other governments has three arms of state namely, Executive, Legislature and Judiciary. Their roles in shaping the health sector are outlined here below.

Executive
As part of the executive, Malawi has two cabinet ministers who link government business with all the relevant stakeholders in the health sector. There is a senior Minister of Health and a Deputy Minister of Health. These two Ministers report to the President of the Republic of Malawi.

Legislature
There is a Parliamentary Committee on health which advocates and lobbies Parliament to enact laws that are supportive of provision of good quality health services in Malawi.

Judiciary
The Judicial system is not directly related to the health sector although the health actions must be within the provisions of the law. If there are issues of contention with regard to Health Policy implementation, the Judiciary has a pivotal role in shaping the health sector actions resulting from the contentious issues. Another critical area where Judiciary plays a key role is in the procurement of health items. The Office of the Director of Public Procurement (ODPP) holds the regulatory function of all procurement activities in the country including procurement of health items for the government of Malawi.

1.4 Health status

Basic health indicators

Malawi has realized good performance in vertical health interventions during FY 2006/07 and 2007/08. However services that are highly reliant on health facilities have faltered. Good progress was registered in immunization coverage and as a result vaccine preventable diseases such poliomyelitis, neonatal tetanus, measles have dramatically been reduced.

Life expectancy at birth unfortunately declined from 48 to 39 years between 1990 and 2000 mainly as a result of HIV/AIDS. The under 5 mortality per 1000 live births has improved from 258 in the 1980s to 133 in 2004. The infant mortality rate declined from 138 per 1,000 live births in late 1980s to 76 in 2004.[8] The maternal mortality ratio dropped from 1,120 in 2000 to 984 in 2004 but remains alarmingly high.[9] According to the National Aids Commission (NAC), HIV/IDS adult prevalence rate was 14.1% in 2005 and has reportedly stabilized. Malaria incidence has declined from the extremely high rate of 812 cases per 1000 in 1992 to around 282 per 1,000 in 2005 (MoH, HMIS Reports, 2005), but continues to be a major problem especially among women and children. There has been almost no improvement in the proportion of births with medical assistance, from 55% in 1992 to 56% in 2000 and 57% in 2004. Malnutrition remains alarmingly high among children. It is reported[10] that the country's 48% stunting rate in 2004 was one of the worst in Africa and has not improved within a decade. Due to the prevailing malnutrition, the rate of maternal anaemia was as high as 68% in 2004.

[8] Ministry of Finance; Malawi Public Expenditure Review 2006.
[9] DHS 2000.
[10] Ministry of Finance, Pulication 2006.

Child mortality is estimated at 103/1,000. Reports also indicate that there are more than a million orphans, 700,000 of whom became orphans when their parents died of AIDS.[11]

The Malawi government estimates that 14.2% of the population is HIV-positive, and that 90,000 deaths experienced in 2003 were due to AIDS. Ecdotal evidence based on private hospital entries put HIV infection rates at 30%. This evidence also suggests that life expectancy is 43.35 for men and 42.61 for women.[12]

Table 1.4 Main causes of morbidity and mortality

Main causes of morbidity	Value (%)	Main causes of mortality	Value (%)
1.Malaria	48%	1. Malaria	0.5/1000
2. Diarrhoeal diseases	9%	2. HIV/AIDS	-
3.Abdominial Diseases	7%	3. Diarrhoeal Diseases (Under 5)	3.1/1000
4.Skin Diseases	7%	4. ARI (under 5 in patients)	1.9/1000
5. ARI	6%	5.STI	-
All Others	23%	**Others**	-

Source: Wikipedia 2009, Malawi Health Bulletin Jan 200, National Health Accounts 1999.

Table 1.5 Health indicators

Indicator	Both sex	Male	Female	Source and year
Life expectancy	-	43.35	42.61	Wikipedia 2008
Crude Mortality rate	533/1,000	554/1,000	514/1000	WHO, 2006
Under-5 mortality rate	120/1,000	126/1,000	114/1000	WHO, 2006
Maternal mortality rate	-	-	984/100 000	MoH, HMIS 2004
HIV/AIDS prevalence rate	14.1%			NAC, 2005
% with access to safe water	-	-	-	-
% with access to sanitation	-	-	-	-

Table 1.5(b) Health Indicators (continued)

Indicator	2000	2004	2006	2008
Infant mortality rate	104/1000 live births (DHS 2000)	76/1000 live births (DHS 2000)	72/1000 live births (MICS 2006)	69/1000 live births (MICS 2006)
Under five mortality rate	189/1000 (DHS 2000)	133/1000 (DHS 2004)	122/1000 (MICS 2006)	118/1000 (MICS 2006)
Maternal mortality rate	1120/100 000 live births (DHS 2000)	984/100 000 live births (DHS 2004)	807/100 000 live births (MICS 2006)	807/100 000 live births (MICS 2006)
Life expectancy at birth	40 years (DHS 2000)	-	50 years (WHO, 2006)	-

Source: Ministry of Health, DHS 2000, 2004 and MICS 2006, WHO 2006.

[11] Website: www.en.wikipedia.org
[12] Website: www.en.wikipedia.org.

2. Country Health System

2.1 Governance

Malawi's health system is a combination of Public and Private Financing and Provision of health services. The major providers include the Public, Private not for Profit, Private Health Practitioners, Traditional and Complementary Medical Practitioners and the informal sector. This section highlights the main actors in the system, the roles and responsibilities they fulfil in the overall governance and management structures. The section provides a summary of health-related aspects of macroeconomic policies and national development policies.

2.2 Service provision

This subsection describes the provision of personal and nonpersonal health services at different levels and how different services are delivered (public health services, curative care, long-term care, and rehabilitative services), the infrastructure for the delivery of the services, community participation in health activities.

The major providers of health services include the Ministry of Health owning 392 (63%) of the total health facilities, the Christian Hospitals Association (CHAM) with 161 (26%) and Ministry of Local Government (MoLG) owning 5%. Others which account for 31 (6%) of the total facilities are NGOs including Banja La Mtsogolo (BLM): a non-for profit nongovernmental organization which specializes in the delivery of sexual and reproductive health services. Table 2.1 gives a brake down of facilities by ownership.

Table 2.1 Health Facilities by ownership

Type of facility	*BLM*	*CHAM*	*MoLG*	*MoH*	*NGO*	*Total*
Central hospital	0	0	0	4	0	4
District hospital	0	0	0	22	0	22
Mental hospital	0	1	0	1	0	2
Rural hospital	0	27	0	19	0	46
Health centre	1	115	12	288	0	416
Clinic	27	8	4	2	1	42
Maternity centre	3	1	12	2	0	18
Rehabilitation centre	0	1	0	0	0	1
VCT centre	0	0	0	0	3	3
Dispensary	0	8	4	54	0	66
TOTAL	31	161	32	392	4	620

Source: Ministry of Health HMIS unit 2008

In terms of the number and size of health facilities, Ministry of health has the highest number of health facilities 392 (63%) followed by CHAM with 161 (26%) and BLM with 31 (6%). These are distributed through out the country although not as equitable as desired by the ministry of health.

The Christian Health Association of Malawi (CHAM)

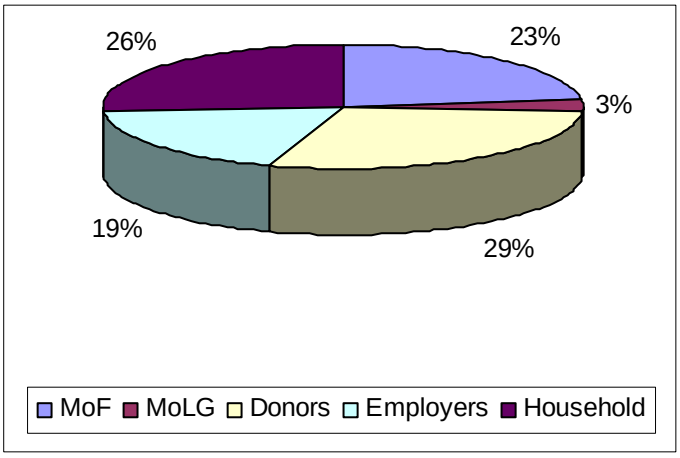
The Christian Health Association of Malawi (CHAM), handles around 10.0% of the financial flows in the Malawian health sector. CHAM represented the interests of 8 churches and 146 health units in 1998. CHAM has a secretariat based in Lilongwe, the capital city of Malawi, whose role is only coordination, facilitation and provision of advice. However, it does not have executive powers over its members.

2.3 Health care financing

In the FY 1998/99 Malawi's health care expenditure was approximately MK 4,894 (US $ 123.9) Million. This represents Malawi's 7.0% of Malawi's GDP which was approximately US $ 1.77bn in 1999.

During the FY 1998/99, the Ministry of Finance contributed 23% and the donors 29% towards health expenditure as indicated in figure 2.1

Figure 2.1 Health Financing Sources FY 1998/1999



The MoHP introduced a systematic resource allocation mechanism to allocate operational resources and drugs between districts for the 2001/2 Financial Year. It should be noted that these formulas being used currently do not represent a perfect allocation mechanism. Better proxies for health care demand can be found other than population and poverty severity. Morbidity and mortality patterns or target groups of the population (children under 5 years, women of child-bearing age) will hopefully be used in future mechanisms, once this information is collected. It is also true that taking account of facilities in deciding allocation might simply exacerbate a situation whereby a district is over or under-endowed with facilities given its level of health demand.

However, the important fact is that the process of needs-based allocation has begun. It is deliberately cautious (partially based on previous allocation) for the 2001/2 FY, in order to bring stakeholders on board and ease in the transition to needs-based allocation (which will in the short-term create some losers). It will move towards more aggressive needs-based allocation in future years.

2.4 Health information system

The Ministry of Health of the Government of Malawi has a fully fledged Health Management Information System (HMIS) unit under the Planning Department and headed by a Deputy Director. This unit has got qualified statisticians who link up with all the districts in collecting and compiling information and use this information for monitoring performance. The unit is well connected with internet and periodically disseminates health information in an annual report called Health Bulletin.

Under the national HMIS, all health facilities in Malawi conduct routine passive surveillance of outpatient cases, inpatient cases, and inpatient deaths. Based on data derived from surveillance as well as from different departments including administration, finance and all other units, a number of indicators for district health services and tertiary care services are routinely monitored. In accordance with the National Health Information Policy (2003), each facility is expected to record and collect data while delivering services or discharging other duties. There are other private and NGO facilities which do not directly report to DHOs but report to the nearest MoH/CHAM facility. The data from such private/NGO facilities is incorporated into the data reported by the corresponding MoH/CHAM facility. Each reporting facility is expected to perform daily, monthly, quarterly and annual compilation and analysis of the data and take necessary actions aimed at improving the management of health programmes and activities thereby improving coverage and quality of services.

Each facility is expected to submit its monthly reports to the district health office (DHO) on a quarterly basis except in some Management Sciences for Health (MSH) supported districts where monthly submissions are currently being piloted. All DHOs and central hospitals (CHs) are required to process monthly data by computer and disseminate reports on a quarterly basis to all stakeholders in the district and provide a feedback to their respective facilities. Electronic raw data are then forwarded to headquarters at Central Monitoring Evaluation and Research Division (CMERD), formerly called Health Management Information Unit (HMIU) every three months by email/other forms of electronic data transfer, for further analysis and use at the national level.

With the recent setting up of the zonal health offices and placement of M&E officers in the district assemblies, it is envisaged that henceforth all the DHOs will submit electronically their quarterly reports to the district assemblies and zonal health offices, marking a copy to the HMIU. It must be ensured that all quarterly district reports are received from all the districts in each zone by the end of the month following the end of each quarter. For example, the report for the quarter October–December 2007 was expected to be submitted on or before 31 January 2008. Each zonal health office is expected to scrutinize the information received from its districts, ensure completeness and correctness, seek clarifications if deemed necessary and make zonal compilations and submit to HMIU. Each district is expected to complete and submit to the Zonal Supervisor (copy marked to the HMIU) the report for the particular quarter based on the feedback received within 45 days of completion of each quarter (for example, by 15th February 2008 for October to December 2007 period).

The HMIU compiles data from both district and central hospital sources and intends to produce in future quarterly bulletins. Currently half-yearly and annual bulletins for the fiscal year are being produced in order to facilitate the use of information in review and planning processes at national and district levels. Production of 6-monthly bulletins is currently delayed essentially due to delays in receipt of reports from districts and central hospitals. It is hoped that the recent establishment of Zonal Health Support Offices will enable HMIU to receive data from the districts much earlier and produce shorter quarterly reports. This report covers the period from July 2006 to June 2007.

Under HMIS, each Government of Malawi (GOM) and Christian Health Association of Malawi (CHAM) health facility is responsible for its own well-defined catchment area. All the private and NGO facilities working within the GOM and CHAM health facility catchment area report to the respective catchment facility. The actual reporting status of these private facilities/providers and NGOs can only be known at the respective facility. Timeliness in data submission by the districts in 2006–2007 continued to be poor with only an average of 22% districts reporting in a timely manner although this was a considerable improvement over the 12% observed during the previous financial year. A total 95% of the health facilities in the country submitted quarterly HMIS reports to their respective districts, showing a marginal increase from the 94% observed in 2005–2006, 91% observed in 2004–2005, and the 92% status recorded in 2003–2004.

3. Health Workers Situation

3.1 Health workers stock and trends

Table 3.1 Health worker population ratios at national level
(See definition of each occupational category in annex)

Occupational categories /Cadres	2008	
	National	HW/1000 population
Generalist medical practitioners	190	0.01
Specialist medical practitioners	67	0.005
Nursing professionals	2 928	0.2
Nursing associate professionals	968	0.07
Midwifery professionals	-	-
Midwifery associate professionals	-	-
Paramedical practitioners	1881	0.14
Dentists	-	-
Dental assistants and therapists	211	0.02
Pharmacists	293	0.02
Pharmaceutical technicians and assistants	-	-
Environmental and occupational health & hygiene workers	318	0.02
Physiotherapists and physiotherapy assistants	9	0.0006
Optometrists and opticians	8	0.0006
Medical imaging and therapeutic equipment operators	102	0.0070
Medical and pathology laboratory technicians	473	0.03
Medical and dental prosthetic technicians	-	-
Community health workers/ (HAS)	10 055	0.77
Health management workers/Skilled administrative staff.	3 072	0.23
Other health support staff	333	0.03
TOTAL	20 908	

Source: Health Worker Census 2008.

3.2 Distribution of health workers by category/cadre

3.2.1 Gender distribution by health occupation/cadre

Table 3.2 Gender distribution by health occupation/cadre
(See definition of each occupational category in annex)

Occupational category/cadre	Total	Female	% Female
Generalist medical practitioners	190	51	26.8%
Specialist medical practitioners	67	13	20%
Nursing professionals	2932	2683	91.5%
Nursing associate professionals	968	820	84.7%
Midwifery professionals	-	-	-
Midwifery associate professionals	-	-	-
Paramedical practitioners	1881	564	30%
Dentists	-	-	-
Dental assistants and therapists	211	43	20.4%
Pharmacists	-	-	-
Pharmaceutical technicians and assistants	293	115	39.2%
Environmental and occupational health & hygiene workers	318	33	10.4%
Physiotherapists and physiotherapy assistants	8	1	12.5%
Optometrists and opticians	-	-	-
Medical imaging and therapeutic equipment operators	102	7	6.9%
Medical and pathology laboratory technicians	473	70	14.8%
Medical and dental prosthetic technicians	-	-	-
Community health workers	10 055	3 865	38.4%
Health management workers/Skilled administrative staff..	2 931	584	19.9%
Other health support staff	11 726	5 698	48.6%
TOTAL	32 155	14 547	45.2%

Source: Malawi HRH Census Report April, 2008.

* HRH Census does not differentiate between the Pharmacists and Pharmacy Technicians; Dentists and Dental Technicians.

The table shows that in Malawi, Male health workers are more than their female counterpart. Males constitute 54.8% and the females 45.2% of the total health workforce.

3.2.2 Age distribution by occupation/cadre

The statutory retirement age for civil servants in Malawi is 60 years. However, due to human resource crisis the country has been facing for some decades now, government of Malawi has arranged and called back some critical cadres such as clinical officers and nurses to work on a three year contract after which period, these health workers will get terminal benefits. This is however, a stop gap measure as the country trains more cadres it deserves. Table 3.4 shows the existing workers by age group and cadre.

Table 3.3 Workers by age group and cadre

Occupational category/cadre	≤30 Yrs	31-40	41-50	≥51
Physicians generalists	55	48	24	18
Physicians specialists	7	6	3	8
Nurses	1 724	1 100	117	292
Midwives	-	-	-	-
Dentists	55	64	23	32
Pharmacists	76	88	57	20
Laboratory workers	123	145	92	12
Environment & public health workers	83	96	62	21
Health management and support workers	765	885	569	196
Other health workers	1 923	3 401	2 756	1 266
TOTAL	4 811	5 833	3 703	1 865

Source: Malawi HRH Census Report April, 2008

Note: Figures could not add up to 100% because some people did not indicate their date of birth during the census.

3.2.3 Region/province/district distribution by occupation/cadre

The HR census of 2008 indicates that the central west zone has the highest percentage of professional health workers as compared to other regions. The region has 47.9% of physicians, 24.9 of nurses, 28.8% of laboratory workers and 32.2% of health management staff. Table 3.5 provides the details of the major variations in the distribution of workers by region.

Table 3.4 Regional/district/province distribution of workers

Occupational category/cadre	Total number	% North	% Central East	% Central West	% South East	% South West
Population	13 187 632					
Physicians generalists	190	12.6	5.3	47.9	11.1	23.2
Physicians specialists	67	2.9	14.9	16.4	25.4	25.4
Nurses	3 900	16.4	11.7	24.9	19.8	27.2
Midwives	-	-	-	-	-	-
Dentists/dental assistants	211	18.9	6.2	32.2	22.7	19.9
Pharmacists/technicians	293	14.7	10.6	29.0	22.9	22.9
Laboratory workers	473	15.2	7.8	28.8	19.9	28.3
Environment & public health workers	319	21.3	13.2	23.2	21.6	20.4
Health management and support workers	2 931	16.9	10.7	32.2	17.6	22.7
Other health workers	2 597	18.8%	13.7%	22.5%	19.3%	25.7%

Source: MoH, Human Resource Census 2007.
See definition of each occupational category in annex.

3.2.4 Urban/rural distribution by occupation/cadre

Table 3.5 Urban/rural distribution of workers
(See definition of each occupational category in annex)

Occupational category/cadre	Total number	% urban	% rural	HW/ 1000 pop in urban	HW/1000 pop in rural
Generalist medical practitioners	190	77%	23%	0.1	0.02
Specialist medical practitioners	67	95%	5%	0.04	0.006
Nursing professionals	2 928	71%	29%	1.6	0.3
Nursing associate professionals	968	60%	40%	0.5	0.09
Midwifery professionals	-	-	-	-	-
Midwifery associate professionals	-	-	-	-	-
Paramedical practitioners	1 881	79%	21%	1.0	0.2
Dentists	-	-	-	-	-
Dental assistants and therapists	211	56%	34%	0.1	0.02
Pharmacists	-	-	-	-	-
Pharmaceutical technicians and assistants	293	58%	42%	0.2	0.03
Environmental and occupational health & hygiene workers	318	75%	25%	0.2	0.03
Physiotherapists and physiotherapy assistants	9	78%	22%	0.005	0.0008
Optometrists and opticians	8	87%	13%	0.004	0.0007
Medical imaging and therapeutic equipment operators	102	79%	21%	0.06	0.009
Medical and pathology laboratory technicians	473	63%	37%	0.3	0.04
Medical and dental prosthetic technicians	-	-	-	-	-
Community health workers	10 055	21%	79%	5.4	0.9
Health management workers/skilled administrative staff	2931	70%	30%	1.6	0.3
Other health support staff	11 726	70%	30%	6.4	1.04

Source: ???

The table shows that most of the health workers in Malawi are located in urban centres. These health workers include 77% of the general medical practitioners, 71% of nursing professionals, 79% of the paramedical practitioners and 70% of health management workers.

3.2.5 Distribution by occupation/cadre

Table 3.6 Public/private for profit/faith based organization/private not for profit distribution of health workers

(See definition of each occupational category in annex)

Occupational category/cadre	Total number	% public sector	% private sector	% faith based organization	% private not-for - profit
Generalist medical practitioners	190	43.5%	50.9%	2.8%	2.8%
Specialist medical practitioners	67	43.5%	50.9%	2.8%	2.8%
Nursing professionals	2 928	64.5%	9.8%	21.5%	4.2%
Nursing associate professionals	968	64.5%	9.8%	21.5%	4.2%
Midwifery professionals*[1]	-	-	-	-	-
Midwifery associate professionals*[1]	-	-	-	-	-
Paramedical practitioners	1 881	57.9%	13.6%	16.8%	9.9%
Dentists*[2]	-	-	-	-	-
Dental assistants and therapists	211	57.9%	13.6%	16.8%	9.9%
Pharmacists	-	-	-	-	-
Pharmaceutical technicians and assistants	293	57.9%	13.6%	16.8%	9.9%
Environmental and occupational health & hygiene workers	318	87.7%	1.8%	8.0%	2.5%
Physiotherapists and physiotherapy assistants	9	67.5%	5.8%	16.8%	9.9%
Optometrists and opticians	8	19.5%	2.4%	70.2%	7.9%
Medical imaging and therapeutic equipment operators	102	57.9%	13.6%	16.8%	9.9%
Medical and pathology laboratory technicians	473	57.9%	13.6%	16.8%	9.9%
Medical and dental prosthetic technicians	-	-	-	-	-
Community health workers/HSAs	10 055	80.3%	1.4%	17.8%	0.5%
Health management workers/ skilled administrative staff	2 931	50.6%	12.4%	30.7%	6.3%
Other health support staff	11 726	19.5%	2.4%	70.2%	7.9%

Source: MoH,HR Census 2008.

*[1] Midwifery is a second qualification for nurses and so it does not stand alone.
*[2] During the HR Census dental assistants and therapists registered as dentists. The Census did not also differentiate between pharmacists and pharmacy technicians.

Table 3.7 Detailed distribution of staff belonging to various professions according to facility ownership

Professions		Facility ownership						Total
		Government	CHAM	NGO	Private	Statutory	Company	
All staff	Count	21 754	8 399	1 104	1 705	506	298	33 766
	% across owner	64.4	24.9	3.3	5.0	1.5	0.9	100
Physicians	Count	108	40	7	49	43	1	248
	% across owner	43.5	16.1	2.8	19.8	17.3	0.4	100
Clinical officers	Count	404	117	69	74	17	17	698
	% across owner	57.9	16.8	9.9	10.6	2.4	2.4	100
Medical assistants	Count	480	117	15	66	8	25	711
	% across owner	67.5	16.5	2.1	9.3	1.1	3.5	100
Nurses	Count	2 872	956	187	320	88	27	4 450
	% across owner	64.5	21.5	4.2	7.2	2.0	0.6	100
Technicians	Count	671	392	58	156	27	10	1 314
	% across owner	51.1	29.8	4.4	11.9	2.1	0.8	100
Lecturers/researchers	Count	43	40	9	0	9	1	102
	% across owner	42.2	39.2	8.8	0.0	8.8	1.0	100
HSAs	Count	8 070	1 790	50	51	9	76	10 046
	% across owner	80.3	17.8	0.5	0.5	0.1	0.8	100
Hospital attendants	Count	3 776	1 660	39	120	12	74	5 681
	% across owner	66.5	29.2	0.7	2.1	0.2	1.3	100
Public health workers	Count	286	26	8	0	5	1	326
	% across owner	87.7	8.0	2.5	0.0	1.5	0.3	100
Semi-skilled workers	Count	72	259	29	9	0	0	369
	% across owner	19.5	70.2	7.9	2.4	0.0	0.0	100
Management/support staff	Count	4 924	2 994	614	855	287	65	9 739
	% across owner	50.6	30.7	6.3	8.8	2.9	0.7	100
Not cited	Count	48	8	19	5	1	1	82
	% across owner	58.5	9.8	23.2	6.1	1.2	1.2	100

Source: Adapted from MoH HR Census 2008.

4. HRH Production

4.1 Pre-service education

The function of pre-service training for health workers is a function of the Ministry of Education.

The largest health training institution in Malawi is Malawi College of Health sciences with the main campus situated at Lilongwe. The College has other Campuses distributed throughout the country.

Training outputs of Nursing and Allied Health cadres in the country has been increasing from 2002 to 2008. The Government of Malawi has planned to gradually expand her training institutions to meet the current HR demand of Professional health workers.

Table 4.1 Number of Training Institutions by type of ownership

Type of training institution	Type of ownership			Total
	Public	Private not for profit, FBOs	Private for profit	
Medicine	1	0	0	1
Dentistry	1	0	0	1
Pharmacy	1	0	0	1
Nursing & midwifery	1 KCN	6 CHAM	1	8
Health sciences	1	1	-	2
Paramedical (indicate the type of cadre)	3 MCHS training laboratory pharmacy technicians and radiographers		-	3
Environment & public health	1	-	-	1
TOTAL	9	7	1	17*

Accurate information on training institutions was not collected during the HR census. The figures here indicate what was in the records at the MoH early 2008.

The annual enrolments in the health training institutions and of the number of health workers who have been produced in different institutions of the country are indicated in tables 4.2 and 4.3.

Table 4.2 Training inputs and outputs in the health training institutions by year

Cadre	Number of entrants				Number of graduates			
	2005	2006	2007	2008	2005	2006	2007	2008
Physicians	20	25	33	60	20	20	33	39
Nurses	191	151	191	129	202	423	504	656
Midwives	-	-	-	-	-	-	-	-
Dentists	-	-	-	-	-	-	-	-
Pharmacists	-	-	-	30	-	-	-	-
Laboratory workers	28	62	62	-	42	40	-	-
Environment & public health workers	19	16	29	-	-	-	-	-
Certificate in clinical medicine	-	124	122	-	-	-	-	-
Diploma in clinical medicine	96	125	132	-	-	-	-	-
Diploma in dental therapy	8	15	14	-	-	-	-	-
Diploma in environmental Health	19	16	29	-	-	-	-	-
Diploma in biomedical Science	12	21	19	-	-	-	-	-
Certificate in biomedical science	-	-	81	-	-	-	-	-
Diploma in pharmacy	19	20	24	-	-	-	-	-
Diploma in radiography	13	20	25	-	-	-	-	-
Diploma in radiography parallel (CHAM)	-	12	-	-	-	-	-	-

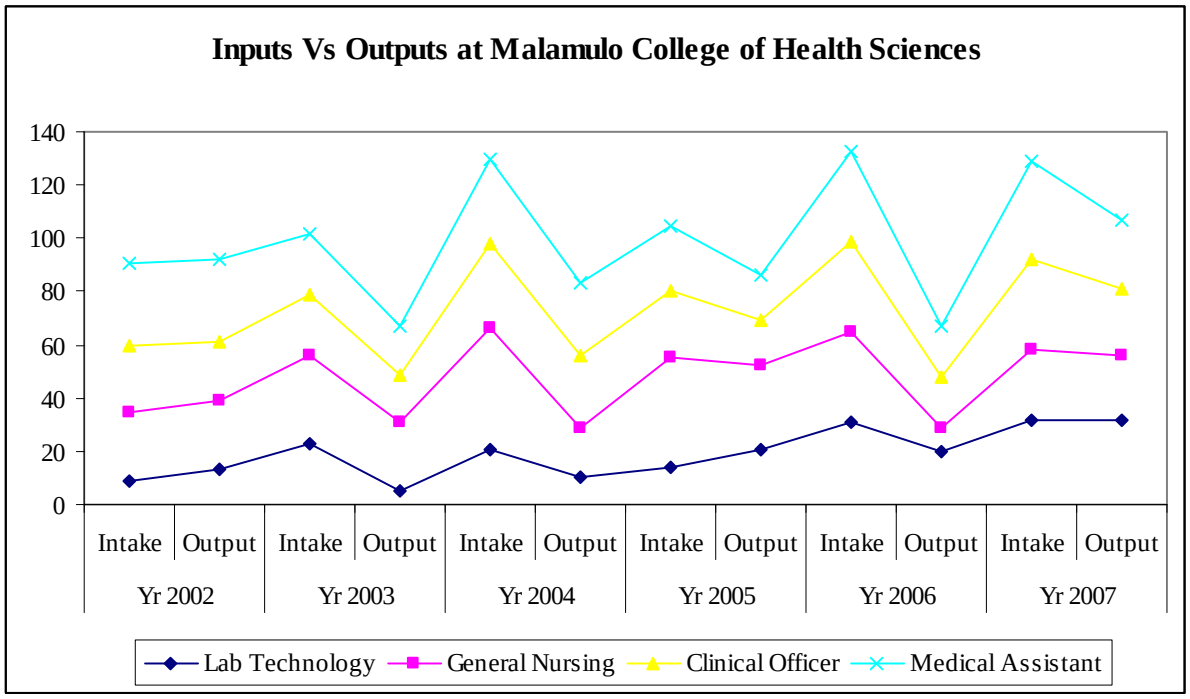
Source: Training School Submissions, August 2008 (Apart from physician and nursing schools, the rest did not send in useful data).

Training requirements for all health workers

In-service training is implemented on the basis of an Essential Health Package (EHP) based on the Training Needs Assessment (TNA). The training package establishes the basis for integrated training on the EHP which avoids disjointed training based on vertical programmes.[13] The DHOs are expected to determine the training needs of their staff rather than programme managers at the MoH headquarters doing so on their behalf. Furthermore, it is expected that the District Health Management Teams (DHMTs) have the capacity and are in position to contract training institutions to conduct such training. The zonal Health Support Offices are supposed to coordinate and support training by the DHOs. Central level programme managers on their part, ensure that the training package is regularly updated and that it responds to current health demands.[14] Figure 4.1 provides information on outputs at Malamulo college of Health sciences (2002–2007).

[13] Ministry of Health, Guide for EHP, 2004.
[14] Ibid.

Figure 4.1 Training inputs vs. outputs at Malamulo College of Health Sciences (2002–2007)



The Human Resource Development (HRD) Policy (2007) stipulates that in most cases HRD interventions in the Ministry are ad hoc and not in light of ongoing demands with regard to human resource requirements. Consequently, the HRD interventions have had limited impact in improving the quantity and quality of personnel needed to implement the Essential Health Package (EHP). In particular, the identification of training needs, the development of training priorities and plans lack systematic analysis and are not linked to public health service goals and objectives. In addition, the selection of candidates for training is often haphazard, with focus primarily centred towards the training of professional health workers. Furthermore, the relevance of the training programs is not validated by informed monitoring and evaluation systems.

Specifically, the HRD Policy is based on the priorities of the Joint Programme of Work (PoW) for the Malawi Health Sector Wide Approach (SWAp), 2004–2010 which revolves around the provision of the EHP as part of the Malawi Growth and Development Strategy (MGDS).

According to the HRD Draft Policy (MoH 2008) the investments in training and staff development activities are not in response to clearly identified training needs due to lack of systematic analysis in the identification of training and staff development needs. Often, staff training is not based on well defined training plans that are linked to organizational goals and objectives, skill requirements, service priorities and programme needs of the public health service.

Furthermore, the selection of candidates for training is often haphazard, with focus primarily centred towards professional workers.

4.2 In-service and continuing education

Short term training

The HRD Policy (MoH 2008) states that unless otherwise stipulated, short-term training is defined as any competency-based training whose duration is a minimum of one week and a maximum of three months. The Malawi government uses the following criteria in selecting staff to proceed on short-term training: The criteria include but not limited to:

- the training should be relevant to the staff member field of work, identified performance gaps and be in line with the priority needs of public health sector;
- must not be on the long term approved training programme;
- in the case of a member of staff having completed his/her post graduate studies, the officer must have served the public health sector for at least a period of one year upon return from their studies;
- priority will be given to staff members who have not attended any other courses during the previous year. This ensures that many staff members benefit from continuing professional development.

Long-term training: definition and eligibility

Unless otherwise stipulated, long-term training shall be defined as any training whose duration is more than three months. The following criteria are used in selecting candidates for long-term training. The criteria include but not limited to the following:

- must be confirmed in service;
- must not be more than 55 years of age;
- must be medically fit and certified by a medical practitioner;
- must have served the Ministry for at least a period of three years upon return from another long-term training;
- must have demonstrated the ability to apply the skills acquired through previous training to improve individual, departmental and Ministry's performance.
- candidates should only be recommended to undertake a training programme outside Malawi provided that same programme is not offered locally;
- candidates will have to meet the requirements for particular programmes as may be stipulated from time to time both by the training provider and the sponsor.

In-house training

There has been a new innovation to the effect that where a significant number of candidates are eligible for the same training, management can identify an experienced local or international facilitator to design and deliver training on an in-house basis. Other than the issue of numbers, consideration for in-house training is also based on training cost, effectiveness of training and impact on organizational performance.

It is planned that execution of In-house Training and Staff Development Plans shall commence with the shorter, cheaper and locally based courses. Candidates shall only proceed on further training after demonstrating their ability and commitment to application of new skills for performance improvement.

4.3 Health workforce requirements

Information of health workforce requirements is not readily available in the country. However, the department of HR Management and Development had started completing projections using the Hall Model in the year 2008. This exercise was never completed. Table 4.3 shows the projections for health workforce requirements in the intermediate term.

Table 4.3 Projections for health workforce requirements for the coming years

Cadre	2017 Public	2017 Private	2017 Total
Specialized doctor	192	17	209
General doctor	295	76	371
Dentist	106	7	113
Pharmacist	102	13	115
Pharmacy technician	426	223	649
Clin nurse specialist	175	3 808	3 983
Nurse professional (reg)	2 137	697	2 834
Nurse/midwife ass (tech)	10 884	9 207	20 091
Spec clinical officer	245	121	366
Gen clinical officer	2 081	1 160	3 241
Dental therapist	253	157	410
Medical assistant	2 881	1 351	4 642
Env. health professional	253	294	547
Allied health prof (diag)	1 690	1 069	2 759
Senior admin/managers	155	37	192
Skilled degree (non med)	315	88	403
Health related deg profes	234	361	595
Support staff (Clinical)	560	222	782
Health surv assistants	56 691	1 176	57 867
Other support staff	3 433	644	4 077

Source: These figures were calculated using the Intermediate Projection Model based on 2007 figures, MoHP, HR Planning Unit.

5. HRH Utilization

5.1 Recruitment

Recruitment of health professionals is carried out by the Health Service commission (HSC). The health workers to recruit are submitted by the HRMD department of the ministry of health. This HR data will depend on the district submissions coupled with the vacancy analysis undertaken by the MOH. The HSC receives the number of vacancies, the people eligible for these vacancies and the reasons why the vacancies fell vacant.

Undertake a vacancy analysis exercise

The process of recruiting health workers begins with calculating the vacancy rates against government established staffing requirements at all levels of health care. The process seeks to establish the available vacancies by category of health workers. This is followed by open adverts to attract the required health workers. Applications are received and processed.

Determine promotion criteria (for officers who need to be promoted)

Through a consultative process the criteria against which objective promotions are to be done is set. The criteria may be part of the standard operations already set. For example only people who have completed 2 years of probation will be promoted automatically.

Compile the candidates' profiles by grade

Using the statistics available at the MoH, the candidates' profiles by grade are compiled to establish those who meet the set criteria. Those who meet the set criteria are them promoted automatically. Letters of promotion are written and sent to the individual candidates through their supervisors.

Making submissions

A letter is drafted for the Principle Secretary's signature or his representative at Director level to the secretary of Health Service Commission (HSC) stating that the concerned candidates meet the relevant criteria and are due for promotion – and a list of the candidates is appended to this letter. The candidates who nearly meet the criteria are recommended for a waiver. This means that they are also promoted just like the ones mentioned above. However, candidates who completely don't meet the criteria are not included on the promotion list.

Actions for HSC

The vacant positions are then filled by the Health Service Commission through either direct promotion (if the number of posts is equal or more than the number of candidates) or by conducting the promotional interviews if the number of posts are less than the number of candidates.

5.2 Deployment and distribution mechanisms

Deployment and distribution mechanisms and career systems

During the roll-out of the MoH National Human Resources Plan (1999–2004), the Ministry established a National Human Resources Advisory Committee in 2000 to guide, inter alia, the development of major human resource for health (HRH) initiatives. Among these there was the preparation of a 6-year Pre-service Training Plan: 2002–2008 aimed at increasing the supply and distribution of additional essential health service providers. Then, the Health Service Commission (HSC) was established in November 2003 by an Act of Parliament, assuming a key responsibility for filling health worker vacancies within the sector.

As the HRH crisis further spiralled, the MoH developed a 6-year Emergency Human Resource Programme: 2004–2010 (EHRP) as a targeted response to addressing the crisis on an immediate, medium and long-term basis. The EHRP was prioritised and costed at approximately US$273 million, addressing specific strategies for health worker production, training, attraction & retention, as well as redressing the long-standing systemic barriers, bottlenecks and poor conditions of service negatively impacting on the health workforce and the broader HRH sub-system.

A frequently identified problem affecting health workforce morale was hitherto lack of a clear and equitable deployment policy within the MoH and the health sector in general. In a preliminary meeting held by MoH with key health sector stakeholders, critical issues discussed and articulated among others was that health workforce deployment is not uniformly or adequately planned, managed, applied or monitored. In addition, limited practical guidance on deployment is provided for in the existing Malawi Public Service Commission Regulations or the Malawi Public Service Act other than a statement that reads “all public officers shall be treated fairly and equally in all aspects of human resource management and development without regard to their political, tribal or religious affiliation, or to their sex, age or origin in Malawi” (Malawi Public Service Commission Regulations)

5.3 The work environment

In a study conducted by College of Medicine (2008) highlights the following key issues. That a report commissioned by DFID (Martin-Staple, 2004) entitled “Proposed 6-year Human Resource Relief Programme for the Malawi Health Sector, Retention, Deployment and Recruitment” recommended doubling compensation in Year 1 for all professional and technical cadres included in the analysis. It was envisaged that this approach would provide an equitable distribution of remuneration enhancement within grades and is in line with private sector and NGO salaries. The report also argued that this approach has the advantage of meeting the goal of compressing the unacceptable compensation gap between upper level (P 2–4) grades with upper middle grades since only Grades 5–8 are included in the compensation scenario. It was further recommended that grade re-structuring take place simultaneously with compensation changes to build increased equity into the pay system. The estimated cost of total compensation was calculated as US$17 million in 2005 increasing to US$31.5 million in 2010 for a total six-year cost of US$143.9 million. If recruitment, redeployment, housing and monitor costs are included, the total cost over the six-year programme will be approximately US$210 million.

The study findings also indicate that “the implementation of the salary top-up allowances commenced in April 2005. Donor support was key to introduction of salary top-up in 2005. DfID contributed approximately $100m, the Global Fund gave $100m, Centre for International Migration, Germany, and UNDP $1m and the Malawi Government allocated an additional $50 million”.

It was further reported that the salary top–up allowance was made available to all health professionals working in government health institutions graded 'M' and above. Those on performance-related contracts were not eligible for the allowance. Currently, there are a total of eleven cadres of professional health workers who are eligible for the allowances. These range between the grades 'D' and 'M' of the Malawi Civil Service including, physicians, nurses, clinical officers, medical assistants, laboratory technicians, pharmacy technicians, radiography technicians, dental therapists, physiotherapists, environmental health officers, medical engineers

The determination of the allowance was based on approximately fifty–two percent of an individual's monthly basic pay. The allowance is subject to income tax. After tax this amounts to a real increase of only 20%. This means that salaries are still perceived as inadequate. This is supported by anecdotal evidence that staff are frequently absent from their work as they engage in numerous types of economic survival strategies. A summary of the number of health workers receiving the top-up allowances between the months of April 2005 to January 2007 is presented in annex 2.
The table shows that the number of staff receiving top-ups was increasing gradually though it is lower than the 700 projected increase in the first year that was the Essential health Package target. There are however; plans to include the HSAs on top-ups.

The implementation was done amidst uncertainty in that some workers thought that the allowances would not attract government tax and that every health worker would be eligible for the allowances. Of the most serious concern is the exclusion of Health Surveillance Assistants who have proved to be key to some of the successes achieved by the ministry in providing health care delivery services (McAuliffe et al 2008)

6. Governance for HRH

6.1 HRH policies and plans

a) The National Health Policy (2008)

The draft National Health Policy (MoH 2008) stipulates that Malawi is currently using a three tier health care delivery system: primary, secondary and tertiary levels of care. 50% of the health facilities are under the Ministry of Health whilst 16% are under the Christian Health Association of Malawi (CHAM) (HRH Census, 2008). Private providers own 20%, while NGOs operate 7%. Statutory corporations and companies own 5% and 2% of the facilities respectively (Ibid). Access to health services is limited; in 2004, only 46% of the population lives within 5km of a health facility.

The draft policy further indicates that the health system continues to face a critical shortage of human resources for health. The current doctor/population and nurse/population ratios are 1:53,176 and 1:2,964, respectively; far below the WHO recommended standards for developing countries; 1 doctor/5,000 population and 1 Nurse/1,000 population. While interventions have been put in place to address the shortage of staff, the health sector still faces challenges. These include the under-production of health personnel and staff attrition due to deaths, resignations and migration.

It is further argued (MOH 2008) that to address these problems a human resources for health strategic plan 2007–2011 was developed to harness human resource capacity development efforts. The strategic goal of the HRH strategic plan is to attract, develop and retain adequate numbers and well-distributed health workers with the requisite skills and experience for efficient and effective accomplishment of the strategic vision, mission, goals and objectives of the Ministry.

b) Deployment Policy

The draft National Health Sector Deployment Policy (2008) is aligned to the provisions of the Malawi Public Service Act, Malawi Public Service Regulations, Human Resource Development Policy for the Public Health Sector, the National Gender and HIV/AIDS Policies.

The Policy is also based on the priorities of the Joint Programme of Work (PoW) for the Malawi Health Sector Wide Approach (SWAp), 2004–2010 which revolves around the provision of the EHP as part of the Malawi Growth and Development Strategy (MGDS).

c) The Human Resource Development Policy

The draft HRD Policy (2008) is in line with the provisions of the Malawi Public Service Training and Development Policy and the Malawi Public Service Act. The policy is also informed by training policies from the public health sector within the SADC region, in particular South Africa and Namibia and SADC HR Strategic Plan (2006–2019).

Specifically, the HRD Policy is based on the priorities of the Joint Programme of Work (PoW) for the Malawi Health Sector Wide Approach (SWAp), 2004–2010 which revolves around the provision of the EHP as part of the Malawi Growth and Development Strategy (MGDS).

d) Human Resources for Health Strategic Plan 2007–2011

This recent strategic plan addresses the broader HR requirements of the public health sector and adopts a global perspective of HRH covering all cadres of health workers as defined by 2006 WHO Annual Health Report. The strategic objectives set out are:

- build capacity for HRH training and development to ensure constant supply of adequate, relevant, well mixed and competent health workforce;
- attain the right HRH numbers and skills mix to populate the health sector taking into account the available resources;
- create, maintain and use a strong knowledge and information base for evidence HRH decisions;
- manage HRH efficiently and effectively, with the aim of attracting and retaining sufficient, equitably distributed, well motivated, empowered and productive workforce;
- develop capacities for HRH policy stewardship and evidence based planning, monitoring and evaluation;
- build sustainable partnerships and strengthen coordination among HRH stakeholders including community and local assemblies.

To achieve the strategic objectives, 10 core strategies have been developed for implementation and these include:

- training and staff development
- improving recruitment
- developing mechanisms for deployment
- Improving retention
- performance management and career development
- HR policy and systems development
- communication and information sharing
- improving tools for research and development
- management and leadership development
- coordination and harmonization of HRH mechanisms.

6.2 Policy development, planning and management for HRH

The MoH until recently has been operating without a written national health policy in place.

Development context

The MoH undertook to develop the National Health Policy to drive the operations of the sector. Those involved in its development included, but not limited to officers working in the public and private health training institutions, regulatory bodies, NGOs, traditional medicine board, civil society organizations and the cooperating partners.

The WHO Country Representative provided the direction on policy development, while the various Technical Working Groups and the Task Force of the MOH facilitated the whole process of developing the National Health Policy. The Health Sector Strategic Plan is still in the draft form. The Ministry is still following the POW 2004–2010 as the overall guide for its strategic operations.
The HR function is still weak at all levels. The department of HR management and development at the MOH level is grossly understaffed although efforts are being put by the government of Malawi to recruit key staff to drive the HR agenda. This process is still ongoing.

In November 1999, the Ministry launched the first ever National Human Resources Development Plan. In January 2000, a National Human Resources Advisory Committee (NHRAC) was formed to advise the Ministry on all aspects of its implementation. The Committee decided that priority be given to the development of a financing proposal which would be submitted to all cooperating partners as the basis for mobilizing the necessary funding to implement the plan. The proposal contained 6 components as follows:

a) Training of clinical cadres of health workers
b) National Training Policy and Plan
c) National Deployment Policy and Plan
d) National Appraisals and Incentives System
e) Health Services Commission
f) Human Resource Information System

Six Year Emergency Training Plan

The Six Year Emergency Training Plan developed in November 2001 called for a substantial increase in training places in all institutions training health professionals. The plan developed with the principals of all the teaching facilities called for the filling of every available space in all teaching institutions, and also for dual annual intakes. The College of Medicine was categorized as a lower priority than the others in light of budgetary constraints.

The plan proposed that approximately 850 professionals would be trained every year for six years. The total cost of the increase for the six years was estimated at MK2,005 billion based on actual expenditures at the time.

Decentralisation of HR function

Responsibility for Human Resources is still held centrally at government level. An information database is being developed by the Department for HR Management and Development with the assistance of EU funding. A number of technical HR advisors and specialists have been placed in the Ministry of Health through the Liverpool Associates in Tropical Health programme.

Human resource planning capacity at the district level is however very poor. Districts are run by District Assemblies. Finance for the running of the district was devolved to the District Assemblies in July 2005. Each district has a District Executive Committee that provides technical advice to the Assembly. District Development plans were drawn up four years ago. The District Assemblies approve the District Health Plans for implementation.

However, human resources at the district level hold very junior grades and this makes it more difficult for them to implement changes, when many of the staff they are dealing with are senior to them. There is a need for people with appropriate authority at district level to handle decentralisation challenges.

The Health Service commission

The Health Services Commission was established in 2003. It is responsible for:
- recruiting, appointing and promoting health workers
- disciplinary control of health workers
- setting salaries for health workers
- setting working conditions for health workers.

However, there is a lack of clarity regarding the Act that established the HSC and the powers it invests in the HSC and this has resulted in some confusion regarding the respective roles of the MoH and the HSC in addressing the HR issues in Malawi.

The HSC consists of seven commissioners and the Chairman.

The HSC also evaluates health workers' performance. For instance, it has just concluded a survey in selected health facilities in the country to determine the problems health workers encounter and how these might be addressed. The main findings emerging from this survey indicate that staff dissatisfaction with the conditions of service, i.e. level of remuneration, working environment, supervision and management styles still leave a lot to be desired.

The power to appoint

Central level staff
The power to appoint health workers is shared among various officers. At the central level if appointment is of an officer from grade P4 and above, the appointment is done by the President on recommendation of the supervisor/Principle Secretary of the Ministry. The Health Service Commission recruits staff for central health service including the Ministry of Health headquarters; and regional hospitals.

District Health Staff
Currently the practice is that the Health Service Commission (HSC) handles recruitment of the district health staff on the advice of the HR section of the Ministry of Health regarding vacancies to fill and promotions to make on the existing staff.

Criteria for selection

There is lack of comprehensive and up to date data on vacancies by cost centre (i.e. location of vacancies by either headquarters, central and district health facility level). Often newly appointed health workers accept employment offers without knowing where their positions are tenable within the Ministry. As such, sometimes suitably qualified and experienced candidates are reluctant to take up their positions with the Ministry. This has a negative impact on placements.

As regards employment of new graduates from local health training institutions, the Ministry often faces excessive delays in their appointment and placement due to poor planning and coordination between the ministry and the training institutions.[15]

[15] Ministry of Health, Deployment Policy (2007).

6.3 Professional regulation

The responsibility to register with professional bodies when required by law or regulations lies exclusively with the employee. However, all practicing health workers in the Malawi are required by law to register with the relevant Professional Councils at a fee.

There are two regulatory Professional Councils namely the:

- Medical Council
- Nurses and Midwives Council.

Each of these councils has an appointed full time registrar that is a secretary to the council and as such participates in the deliberations of the council but has no right to vote.

The Medical Council
The Medical Council of Malawi is responsible for registration and licensing of medical and dental practitioners. Information on its operations is however very scanty.

The Nurses and Midwives Council of Malawi
The Nurses and Midwives Council of Malawi was formed by the Act of Parliament in 1995 is a sole regulatory body mandated by The Act of Parliament Cap 36:2 to regulate training, education and practice of all nursing and midwifery services. In liaison with the Ministry of Health, the Council advocates for increase of nurses and midwives in the country to ensure provision of quality nursing and midwifery services.

The Nurses and Midwives Council has an important role in the development of human resource. The Council carries out the following functions to fulfil its role in HRD.

- gives approval of nursing/midwifery colleges to train nurses and midwives;
- sets standards for nursing/midwifery institutions;
- sets Monitoring and evaluation criteria of the training institutions and checks if the set standards are being followed to ensure compliance;
- sets and conducts licensure examinations for the nurses and midwives that have undergone training. The council gives certificates to those nurses/midwives who pass the licensure examinations;
- keeps the registers for all nurses/midwives that are licensed and practicing;
- conducts monitoring and evaluation of health facilities to ensure that standards of care are adequately complied with.

Available records indicate that by end of June 2008, the Council had registered a total of 8360 practicing nurse/midwives. A total of 3066 are registered nurses while 5294 are enrolled (nurse/midwife technicians).

6.4 HRH information

The Ministry of health collects generic information routinely using an established Health Management Information System. Plans are underway to establish a Human Resource Information System (HRIS) to complement the ongoing efforts.

Under HMIS, each Government of Malawi (GOM) and Christian Health Association of Malawi (CHAM) health facility is responsible for its own well-defined catchment area.[16] All the private and NGO facilities working within the GOM and CHAM health facility catchment area report to the respective catchment facility. The actual reporting status of these private facilities/providers and NGOs can only be known at the respective facility. Timeliness in data submission by the districts in 2006–2007 continued to be poor with only an average of 22% districts reporting in a timely manner although this was a considerable improvement over the 12% observed during the previous financial year. 95% of the health facilities in the country submitted quarterly HMIS reports to their respective districts, showing a marginal increase from the 94% observed in 2005–2006, 91% observed in 2004–2005, and the 92% status recorded in 2003–2004. The reporting ranged from 75% in Mulanje to 100% in 12 districts.

The Health Bulletin (2007) revealed that there has been a slight increase in the number of districts with 100% reporting by facilities since only 8 districts had recorded 100% reporting by facilities in 2004–2005 and this number went up to 10 in 2005–2006. However, while Thyolo improved from 67% facilities reporting in 2004–2005 to 87% in 2005–2006 and 98% during the current reporting period, Dedza has slipped from 90% in 2004–2005 to 77% during 2005–2006 and continued at that level in 2006–2007. The report further says, ”It may therefore be worth investigating whether sharp attrition in human resources may be resulting in the inability of some of the health facilities in districts such as Dedza and Mulanje, to report in a timely and regular manner, even if service provision may be continuing unabated (HMIS 2007)”

6.5 HRH research

Most of the HRH research programmes are initiated outside the ministry of health organized by NGOs such as GTZ, DFID and CHAM. Other research projects are managed by the Universities such as College of Medicine (COM) and the centre for social research. Funding is normally provided by the cooperating partners together with the Government of Malawi.

6.6 Stakeholders in HRH

Nongovernmental organizations

NGOs in Malawian Health Sector include International and national bodies scattered all over the country. This is partly a by-product of democracy’s consolidation in Malawi, but due to the fact that some donors channel large proportions to these providers rather than the MoHP, some donors particularly certain bilateral donors, believe these providers yield more immediate and visible results as they work close to the population.

In the FY 1998/99, it is estimated that NGOs provided health care services in Malawi to the tune of 18.4% of total health care expenditure. Detailed functional use of their resources has not been possible to obtain due to poor reporting format of their expenditure.

[16] Ministry of Health, Health Bulletin 2007.

Private practitioners

Malawi has a fast growing private-for-profit sector. A small number of clinicians and paramedics provide private health care services. This private-for-profit (PNFP) modern care is mostly urban based (but fast expanding both in numbers and geographic distribution). One of the reasons behind this small private-for-profit sector is the government's policy, which until 1987 did not allow health personnel to undertake private practice. Since then doctors and paramedics have been allowed to undertake private practice. Most doctors dispense medicines themselves, purchased from commercial companies, but may issue prescriptions to be filled by the growing number of modern pharmacies, which are limited to urban areas.

It has been estimated that the revenue of the private-for-profit sector was around MK 493.6 million in the 1998/99 financial year, representing about 10.1% of the total health care expenditure. The largest component of this subsector are private practitioners, with MK 258.1 million expenditure closely followed by shop and grocery sales of pharmaceuticals, at MK 201.6 million.

Annex 1: Health Workforce Status

Skill level	Total	Total women	Urban	Rural	Public	Private
Generalist medical practitioners	190	51	117	73	75	115
Specialist medical practitioners	67	13	60	7	29	38
Nursing professionals	2 928	2 683	118	2 810	1 974	954
Nursing associate professionals	968	820	249	719	527	441
Midwifery professionals*[1]	-	-	-	-	-	-
Midwifery associate professionals*[1]	-	-	-	-	-	-
Paramedical practitioners	1 881	564	66	1 815	1 089	792
Dentists*[2]	-	-	-	-	-	-
Dental assistants and therapists	211	43	85	126	120	91
Pharmacists	-	-	-	-	-	-
Pharmaceutical technicians and assistants	293	115	119	174	109	184
Environmental and occupational health & hygiene workers	318	33	73	245	239	79
Physiotherapists and physiotherapy assistants	9	1	7	2	4	5
Optometrists and opticians	8	0	5	3	4	4
Medical imaging and therapeutic equipment operators	102	7	45	57	68	34
Medical and pathology laboratory technicians	473	70	191	282	190	283
Medical and dental prosthetic technicians	-	-	-	-	-	-
Community health workers	10 055	3 865	694	9 361	5 087	4 968
Medical assistants	1 407	584	344	1 063	591	816
Traditional and complementary medicine practitioners	-	-	-	-	-	-
Other health service providers	567	117	112	455	455	112
Health care assistants and other personal care workers in health services	424	88	131	293	373	51
Other science professionals and technicians	221	46	25	196	41	180
Health service managers	2 931	607	1 185	1 746	1 289	1 642
Medical records and health information technicians	782	252	276	506	152	630
Other health management and support workers	2 931	759	1 395	1 536	157	2 774

Source: MoHP Planning Department, HRH Census, 2008.

*[1] Midwifery is a second qualification for nurses and so it does not stand alone.
*[2] During the HR Census dental assistants and therapists registered as dentists.

Annex 2: Health Workers Receiving Top-up Allowance

Table: Health Workers Receiving Top-Up Allowances: April 2005 – January 2007

Month	No. of GOM employees on top-ups	Cost of GOM salary top-ups (MK)	No. of CHAM employees on top-ups	Cost of CHAM salaries employees top-ups (MK)	Total cost of salary top-ups (MK)
April 2005	3 763	31 254 932	1 582	13 600 015	44 854 947
January 2006	4 031	34 938 225	1 764	14 556 061	49 494 286
January 2007	-	-	1 796	17 544 914	-

Source: Adapted from the McAuliffe et al (2008) HR report by the College of Medicine.

Annex 3: Definitions of Health Workforce Data

Health Workforce: Aggregated Data

In the aggregated data, the health workforce is grouped into the following 10 categories:

Physicians
Includes generalists and specialists.

Nurses
Includes professional nurses, auxiliary nurses, enrolled nurses and other nurses, such as dental nurses and primary care nurses.

Midwives
Includes professional midwives, auxiliary midwives and enrolled midwives. Traditional birth attendants, who are counted as community health workers, appear elsewhere.

Dentists
Includes dentists, dental assistants and dental technicians

Pharmacists
Includes pharmacists, pharmaceutical assistants and pharmaceutical technicians

Laboratory workers
Includes laboratory scientists, laboratory assistants, laboratory technicians and radiographers.

Environment and public health workers
Includes environmental and public health officers, sanitarians, hygienists, environmental and public health technicians, district health officers, malaria technicians, meat inspectors, public health supervisors and similar professions.

Community health workers
Includes traditional medicine practitioners, faith healers, assistant/community health education workers, community health officers, family health workers, lady health visitors, health extension package workers, community midwives, institution-based personal care workers and traditional birth attendants.

Other health workers
Includes a large number of occupations such as dieticians and nutritionists, medical assistants, occupational therapists, operators of medical and dentistry equipment, optometrists and opticians, physiotherapists, podiatrists, prosthetic/orthetic engineers, psychologists, respiratory therapists, speech pathologists, medical trainees and interns.

Health management and support workers
Includes general managers, statisticians, lawyers, accountants, medical secretaries, gardeners, computer technicians, ambulance staff, cleaning staff, building and engineering staff, skilled administrative staff and general support staff.

Annex 4: Health Workforce Classification Mapping

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Generalist medical practitioners	2211	**Generalist medical practitioners** (physicians) apply the principles and procedures of modern medicine in preventing, diagnosing, caring for and treating illness, disease and injury in humans and the maintenance of general health. They may supervise the implementation of care and treatment plans by other health care providers, and conduct medical education and research activities. They do not limit their practice to certain disease categories or methods of treatment, and may assume responsibility for the provision of continuing and comprehensive medical care.	Medical doctor (general), General practitioner, Family medical practitioner, Primary health care physician, District medical doctor-therapeutist, Resident medical officer specialising in general practice	Specialist physician-2212, Paediatrician-2212, Surgeon-2212, Psychiatrist-2212, Traditional medicine practitioner-2230, Paramedical practitioner-2240	Occupations included in this category require completion of a university-level degree in basic medical education plus postgraduate clinical training or equivalent for competent performance. Medical trainees who are non-university graduates should not be included here. Medical interns who have completed their university education in basic medical education and are undertaking postgraduate clinical training are included here. Although in some countries 'general practice' and 'family medicine' may be considered as medical specialisations, these occupations should always be classified here.
Specialist medical practitioners	2212	**Specialist medical practitioners** (physicians) apply the principles and procedures of modern medicine in preventing, diagnosing, caring for and treating illness, disease and injury in humans using specialised testing, diagnostic, medical, surgical, physical and psychological techniques. They may supervise the implementation of care and treatment plans by other health care providers. They specialise in certain disease categories, types of patient or methods of treatment, and may conduct medical education and research activities in their chosen areas of specialisation.	Specialist physician (internal medicine), Surgeon, Anaesthetist, Cardiologist, Emergency medicine specialist, Ophthalmologist, Obstetrician, Gynaecologist, Paediatrician, Pathologist, Preventive medicine specialist, Psychiatrist, Radiologist, Resident medical officer in specialist training	General medical practitioner-2211, Dental practitioner-2261, Dental surgeon-2261, Physiotherapist-2264, Psychologist-2634	Occupations included in this category require completion of a university-level degree in basic medical education plus postgraduate clinical training in a medical specialisation (except general practice) or equivalent. Medical trainees who are non-university graduates should not be included here. Resident medical officers training as specialist practitioners (except general practice) are included here. Although in some countries 'stomatology' may be considered as a medical specialisation, stomatologists should be included under 'Dentists'-2261.

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Nursing professionals	2221	**Nursing professionals** plan, manage, provide and evaluate nursing care services for persons in need of such care due to effects of illness, injury, or other physical or mental impairment, or potential risks for health. They work autonomously or in teams with medical doctors and other health workers. They may supervise the implementation of nursing care plans, and conduct nursing education activities.	Professional nurse, Specialist nurse, Nurse practitioner, Clinical nurse, General nurse-midwife, Public health nurse, Nurse anaesthetist	Professional midwife-2222, Associate professional nurse-3221, Associate professional midwife-3222, Paramedical practitioner-2240	Occupations included in this category normally require completion of tertiary-level education in theoretical and practical nursing. Nursing professionals who spend the majority of their working time in maternal and newborn health care services should be included under 'Midwifery professionals'-2222.
Nursing associate professionals	3221	**Nursing associate professionals** provide basic nursing care for people who are in need of such care due to effects of ageing, illness, injury, or other physical or mental impairment. They implement care, treatment and referral plans established by medical, nursing and other health professionals.	Associate professional nurse, Assistant nurse; Licensed practical nurse, Enrolled nurse	Professional nurse-2221, Specialist nurse-2221, Associate professional midwife-3222, Community nurse attendant-3253, Nursing aide (hospital or clinic)-5321, Nursing aide (home)-5322	Occupations included in this category normally require formal training in nursing services. Associate professional nurses who spend the majority of their working time in maternal and newborn health care services should be included under 'Associate professional midwives'-2223.
Midwifery professionals	2222	**Midwifery professionals** plan, manage, provide and evaluate midwifery care services before, during and after pregnancy and childbirth. They provide delivery care for reducing health risks to women and newborns, working autonomously or in teams with other health care providers.	Professional midwife	Nursing aide-5321, Associate professional nurse-3231, Associate professional midwife-3232	Occupations included in this category normally require completion of tertiary-level education in theoretical and practical midwifery.

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Midwifery associate professionals	3222	**Midwifery associate professionals** provide basic health care and advise before, during and after pregnancy and childbirth. They implement care, treatment and referral plans to reduce health risks to women and newborns as established by medical, midwifery and other health professionals.	Associate professional midwife, Assistant midwife	Professional midwife-2222, Associate professional nurse-3221, Midwifery attendant-5321	Occupations included in this category normally require formal training in midwifery services. Midwifery attendants with little or no formal training should be included under 'Health care assistants'-5321.
Paramedical practitioners	2240	**Paramedical practitioners** (advanced practice clinicians) provide advisory, diagnostic, curative and preventive medical services in a variety of settings. They work autonomously or with limited supervision of medical doctors, and apply advanced clinical procedures for treating and preventing diseases, injuries, and other physical or mental impairments common to specific communities.	Clinical officer, Surgical technician, Physician assistant, Primary care paramedic, Advanced care paramedic, Feldsher	Emergency paramedic-3258, Medical assistant-3256, General medical practitioner-2211, Surgeon-2212	Occupations included in this category normally require completion of tertiary-level training in theoretical and practical medical services. Workers providing services limited to emergency treatment and ambulance practice should be included under 'Ambulance workers'-3258.
Dentists	2261	**Dentists** apply the principles and procedures of modern dentistry in diagnosing, treating and preventing diseases, injuries and abnormalities of the teeth, mouth, jaws and associated tissues. They use a broad range of specialised diagnostic, surgical and other techniques to promote and restore oral health.	Dentist, Dental practitioner, Dental surgeon, Oral and maxillofacial surgeon, Endodontist, Orthodontist, Paedodontist, Periodontist, Prosthodontist, Stomatologist	Dental prosthetic technician-3214, Dental assistant-3251, Dental hygienist-3251	Occupations included in this category normally require completion of university-level training in theoretical and practical dentistry or related field. Although in some countries ‘stomatology’ and 'dental, oral and maxillofacial surgery' may be considered as medical specialisations, occupations in these fields should always be classified here.
Dental assistants and therapists	3251	**Dental assistants and therapists** provide basic dental care services for the prevention and treatment of diseases and disorders of the teeth and mouth, as per care plans and procedures established by a dentist or other oral health professional.	Dental assistant, Dental hygienist, Dental therapist	Dental aide-5329, Dental mechanic-3214, Dental prosthetist-3214, Dental technician-3214, Dentist-2261	Occupations included in this category normally require formal training in dental hygiene, dental-assisting or related field.

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Pharmacists	2262	**Pharmacists** store, preserve, compound, test and dispense medicinal products. They counsel on the proper use and adverse effects of drugs and medicines following prescriptions issued by medical doctors and other health professionals. They contribute to researching, preparing, prescribing and monitoring medicinal therapies for optimising human health.	Hospital pharmacist, Industrial pharmacist, Retail pharmacist, Dispensing chemist	Pharmacologist-2131, Pharmaceutical technician-3213	Occupations included in this category normally require completion of university-level training in theoretical and practical pharmacy, pharmaceutical chemistry or a related field. Pharmacologists and related professionals who study living organisms are not included here (classified under Life science professionals).
Pharma-ceutical technicians and assistants	3213	**Pharmaceutical technicians and assistants** perform routine tasks associated with preparing and dispensing medicinal products under the supervision of a pharmacist or other health professional.	Pharmaceutical technician, Pharmacy assistant	Pharmacist-2262, Pharmacy aide-5329, Pharmacology technician-3141	Occupations included in this category normally require basic medical and pharmaceutical knowledge obtained through formal training. Pharmacology technicians and related associate professionals who work with living organisms are not included here (classified under Life science technicians).
Environmental and occupational health & hygiene workers	2263, 3257	**Environmental and occupational health & hygiene workers** plan, assess and investigate the implementation of programs and regulations to monitor and control environmental factors that can potentially affect human health, to ensure safe and healthy working conditions, and to ensure the safety of processes for the production of goods and services.	Environmental health officer, Occupational health and safety adviser, Occupational health and safety inspector, Occupational hygienist, Radiation protection adviser, Sanitarian, Health inspector, Food sanitation and safety inspector	Specialist medical practitioner (public health)-2212, Specialist nurse (public health)-2221, Occupational therapist-2269, Environmental protection professional-2133	Occupations included in this category normally require formal training in environmental public health, occupational health and safety, sanitary sciences, or a related field. Environmental protection workers who study and assess the effects on the environment of human activity are not included here (classified under Life science professionals).

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Physio-therapists and physiotherapy assistants	2264, 3255	**Physiotherapists and physiotherapy assistants** provide physical therapeutic treatments to patients in circumstances where functional movement is threatened by injury, disease or impairment. They may apply movement, ultrasound, heating, laser and other techniques.	Physiotherapist, Paediatric physical therapist, Orthopaedic physical therapist, Physiotherapist assistant, Physical rehabilitation technician, Massage therapist, Electrotherapist, Acupressure therapist, Shiatsu therapist, Hydrotherapist	Occupational therapist-2269, Osteopath-3259, Chiropractor-3259, Podiatrist-2269	Occupations included in this category normally require formal training in physical rehabilitation therapy or a related field.
Optometrists and opticians	2267, 3254	**Optometrists and opticians** provide primary eye health and vision care services. Optometrists and ophthalmic opticians provide diagnosis management and treatment services for disorders of the eyes and visual system. Dispensing opticians design, fit and dispense optical lenses for the correction of reduced visual acuity.	Optometrist, Optician, Orthoptist	Ophthalmologist-2212	Occupations included in this category normally require formal training in optometry, orthoptics, opticianry or a related field.
Medical imaging and therapeutic equipment operators	3211	**Medical imaging and therapeutic equipment technicians** test and operate radiographic, ultrasound and other medical imaging equipment to produce images of body structures for the diagnosis and treatment of injury, disease and other impairments. They may administer radiation treatments to patients under the supervision of a radiologist or other health professional.	Medical imaging technician, Diagnostic medical radiographer, Medical radiation therapist, Magnetic resonance imaging technologist, Nuclear medicine technologist, Sonographer, Mammographer	Radiologist-2212	Occupations included in this category normally require formal training in medical technology, radiology, sonography, nuclear medical technology, or a related field.

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Medical and pathology laboratory technicians	3212	**Medical and pathology laboratory technicians** perform clinical tests on specimens of bodily fluids and tissues in order to get information about the health of a patient or cause of death.	Medical laboratory technician, Medical laboratory assistant, Cytology technician, Blood bank technician, Pathology technician	Pathologist-2212	Occupations included in this category normally require formal training in biomedical science, medical technology, or a related field. Technicians conducting laboratory tests on specimens from animals are not included here (classified under Veterinary technicians).
Medical and dental prosthetic technicians	3214	**Medical and dental prosthetic technicians** design, fit, service and repair medical and dental devices and appliances following prescriptions or instructions established by a health professional. They may service a wide range of support instruments to correct physical medical or dental problems such as neck braces, orthopedic splints, artificial limbs, hearing aides, arch supports, dentures, and dental crowns and bridges.	Medical appliance technician, Prosthetist, Orthotist, Prosthetic technician, Orthotic technician, Dental technician, Denturist	Dental assistant-3251, Dispensing optician-3254	Occupations included in this category normally require basic medical, dental and anatomical knowledge obtained through formal training. Technicians who construct and repair precision medical and surgical instruments based on engineering knowledge alone are not included here (classified under Science and engineering associate professionals).
Community health workers	3253	**Community health workers** provide health education, referral and followup, case management, and basic preventive health care and home visiting services to specific communities. They provide support and assistance to individuals and families in navigating the health and social services system.	Community health worker, Community health aide, Community health promoter, Village health worker	Nursing aide-5322, Home care aide-5322, Village healer-3230	Occupations included in this category normally require formal or informal training recognized by the health and social services authorities. Providers of routine personal care services, self-defined health care providers and traditional medicine practitioners are not included here.

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Medical assistants	3256	**Medical assistants** perform basic clinical and administrative tasks to support patient care under the direct supervision of a medical practitioner or other health professional.	Medical assistant, Clinical assistant, Ophthalmic assistant	Clinical officer-2240, Physician assistant-2240, Dental assistant-3251, Physiotherapy assistant-3255, Medical prosthetic technician-3214, Medical imaging assistant-5321	Occupations included in this category normally require formal training in health services provision. Clinical care providers with advanced training and skills to provide independent medical diagnostic and treatment services should be classified under 'Paramedical practitioners'-2240.
Traditional and complement-tary medicine practitioners	2230, 3230	**Traditional and complementary medicine practitioners** apply procedures and practices based on the theories, beliefs and experiences indigenous to different cultures, used in the maintenance of health and in the prevention or treatment of physical and mental illnesses.	Acupuncturist, Ayurvedic practitioner, Unani practitioner, Chinese herbal medicine practitioner, Homeopath, Naturopath, Bonesetter, Herbalist, Witch doctor, Village healer, Scraping and cupping therapist	Acupressure therapist-3255, Shiatsu therapist-3255, Hydrotherapist-3255, Chiropractor-3259, Osteopath-3259	Occupations included in this category normally require knowledge and skills acquired from formal education, or informally through the traditions and practices of the communities where they originated. Faith healers who treat human ailments through spiritual therapies, without using herbal preparations or other physical interventions, are not included here. Occupations that rely on traditional forms of massage and the application of pressure, such as acupressure and shiatsu therapists, are classified in 'Physiotherapy technicians and assistants'-3255.

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Other health service providers		This category may include a wide range of occupations connected with health service provision.	Ambulance paramedic-3258, Emergency medical technician-3258, Dieticians and nutritionists-2265, Audiologists and speech therapists-2266, Podiatrist-2269, Occupational therapist-2269, Chiropractor-3259, Osteopath-3259, Psychologist-2634, Social workers and counsellors-2635		Occupations included in this category normally require formal training in a health or social service-related field.
Health care assistants and other personal care workers in health services	5321, 5322, 5329	**Personal care workers** perform routine patient care services as per care plans, practices and procedures established by a health professional.	Hospital orderly, Nursing aide, Patient care assistant, Dental aide, Midwifery attendant, Psychiatric aide, Medical imaging assistant, Home care aide, Pharmacy aide, Dental aide, Sterilization aide, Faith healer	Nurse (associate professional)-3221, Nurse (professional)-2221, Community health worker-3253	Occupations included in this category generally do not require extensive health care knowledge or training. Personal care workers may work in a variety of settings including private homes as well as health facilities (hospitals, medical and dental practice facilities, rehabilitation centres, and other types of residential facilities with or without on-site nursing care services).

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Other science professionals and technicians		This category may include a wide range of occupations connected with physical and life sciences research and applications to solve human health problems.	Pharmacologist-2131, Biologist-2131, Biotechnologist-2131, Cell geneticist-2131, Environmental protection professional-2133, Environmental research scientist-2133, Medical physicist-2111, Bacteriology technician-3141, Pharmacology technician-3141		Occupations included here normally require formal training in a physical or life science-related field.
Health service managers	1342	**Health service managers** plan, coordinate and supervise the provision of clinical, personal care and community health care services.	Health facility administrator, Medical nursing home administrator, Clinical manager, Director of nursing care, Hospital matron, Community care coordinator, Chief public health officer	Aged care service manager-1343, Senior government official-1112	The main tasks and duties for jobs in this occupational category include guiding and directing the activities of organizations, departments and other workers. Education and training requirements may vary depending on the position and national context — likely including some combination of formal education, on-the-job training and work experience.
Medical records and health information technicians	3252	**Medical records and health information technicians** assess, manage and implement health records processing, storage and retrieval systems in medical facilities and other health care settings to meet the legal, professional, ethical and administrative records-keeping requirements of health services delivery.	Medical records clerk, Medical records technician, Health information system technician, Health information clerk, Medical records analyst, Clinical coder, Disease registry technician	Medical secretary-3344, Data entry clerk-4132, Filing and copying clerk-4415	Occupations included in this category normally require knowledge of medical terminology, legal aspects of health information, health data standards, and computer- or paper-based data management as obtained through formal education and/or on-the-job training. Clerks who perform general secretarial or clerical duties are not included here (classified under Clerical support workers).

Occupation	Code	Definition	Notes		
			Examples of occupations included here	Excluded occupations classified elsewhere	Additional comments
Other health management and support workers		This category may include a wide range of workers performing a variety of administrative, clerical, and other tasks and duties to support the provision of health services and functioning of health systems.	Health policy analyst-2422, Government licensing official-3354, Aged care service manager-1343, Staff training officer-2424, Medical secretary-3344, Computer technician-3513, Data entry clerk-4132, Filing and copying clerk-4415, Receptionist-4226, Building caretaker-5153, Cook-5120, Ambulance driver-8322		

Annex 5: Mapping Education and Training to the International Standard Classification

Field	Definition	Examples of education programmes included here
Medicine	The study of the principles and procedures used in preventing, diagnosing, caring for and treating illness, disease and injury in humans and the maintenance of general health.	**Basic medical education**: programmes for the training of medical doctors/physicians
		Paramedical programmes: training of paramedical practitioners/advanced practice clinicians (includes tertiary level programmes not leading directly to the award of a medical research qualification)
Nursing and midwifery	The study of providing health care for people who are in need of such care due to effects of illness, injury or impairment, or potential risks for health, and assisting physicians and other health professionals diagnose and treat patients.	**Basic nursing education**: programmes for the training of nursing professionals (tertiary level)
		Basic midwifery education: programmes for the training of midwifery professionals (tertiary level)
		Assistant nursing education: programmes for the training of nursing associate professionals
		Assistant midwifery education: programmes for the training of midwifery associate professionals
Dental studies	The study of diagnosing, treating and preventing diseases and abnormalities of the teeth and gums. It includes the study of designing, making and repairing dental prostheses and orthodontic appliances. It also includes the study of providing assistance to dentists.	**Dentistry**: programmes for the training of dentists (tertiary level)
		Dental care services: programmes for the training of dental assistants, dental therapists, dental prosthetic technicians and related occupations (e.g. dental-assisting, dental hygiene, dental nursing, dental laboratory technology)
Medical services (health sciences)	The study of physical disorders, treating diseases and maintaining the physical well-being of humans, using non-surgical procedures.	**Pharmacy**: programmes for the training of pharmacists (tertiary level)
		Physiotherapy: programmes for the training of physiotherapists (tertiary level)
		Medical technology: programmes for the training of medical imaging and therapeutic equipment technicians (e.g. medical X-ray techniques, radiology, radiotherapy, sonography)
		Medical laboratory technology: programmes for the training of medical and pathology laboratory technicians
		Medical prosthetics: programmes for the training of medical prosthetic technicians
		Other programmes for the training of health professionals and associate professionals (e.g. emergency medical treatment, nutrition and dietetics, optometry, speech pathology)
Environmental, public and occupational health	The study of the relationships between living organisms and the environment that affect public health. Includes the study of recognizing, evaluating and controlling environmental factors associated with the workplace.	Programmes in services to the community dealing with items that affect public health (e.g. hygiene standards in food and water supply)
		Programmes in occupational health and safety (e.g. ergonomics, health and safety in the workplace, industrial hygiene)

Annex 6: Members involved in the Working Group

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