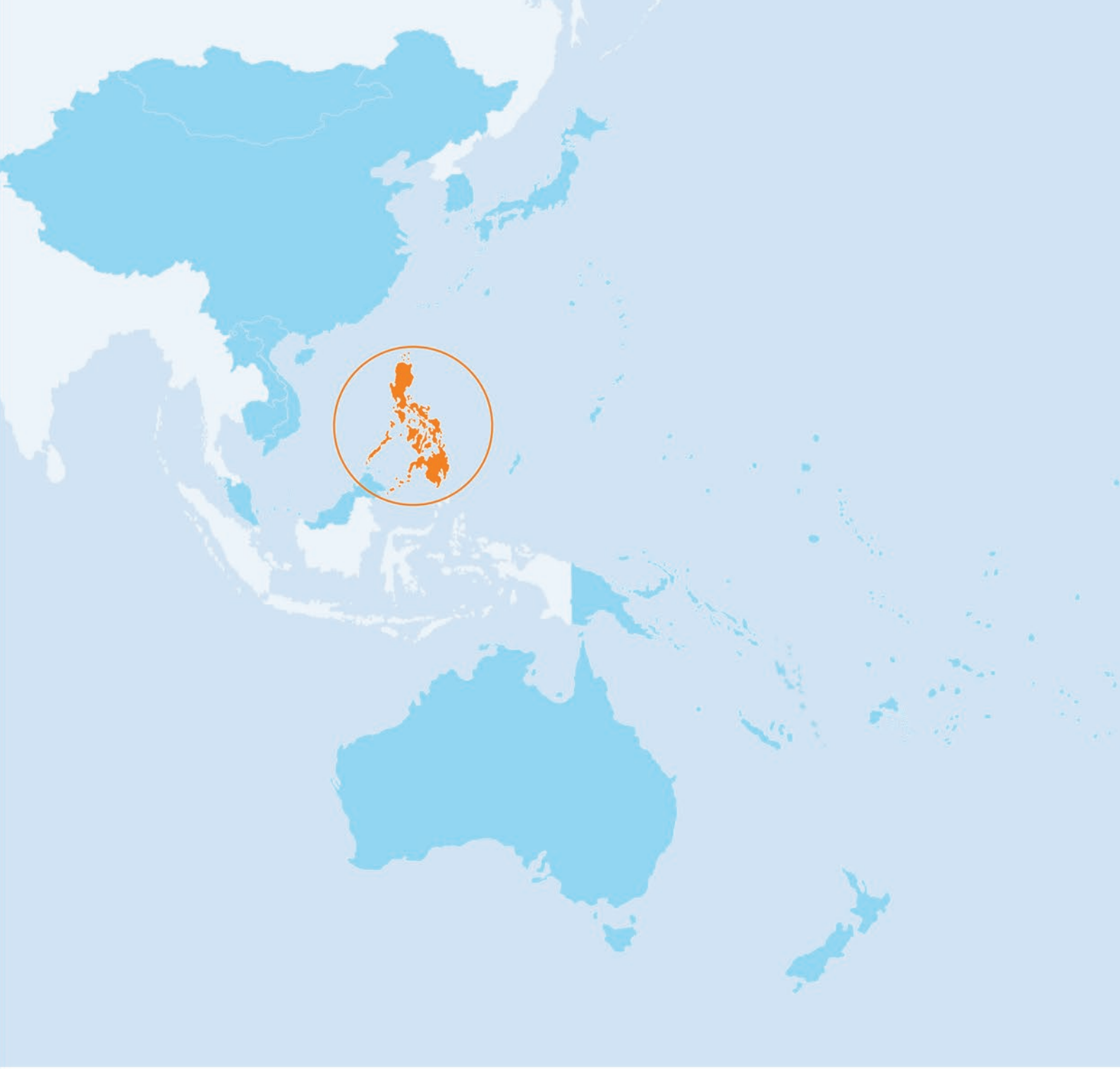

Human Resources for Health Country Profiles

PHILIPPINES

World Health Organization
Western Pacific Region

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Acronyms

AHA	Aquino Health Agenda
ARMM	Autonomous Region in Muslim Mindanao
BHS	barangay health station
BHW	barangay health worker
CAR	Cordillera Administrative Region
CHED	Commission on Higher Education
CSC	Civil Service Commission
CPD	continuing professional development
CPE	continuing professional education
DBM	Department of Budget and Management
DFA	Department of Foreign Affairs
DILG	Department of Interior and Local Government
DOH	Department of Health
DOLE	Department of Labor and Employment
DSWD	Department of Social Welfare and Development
DTTB	Doctors to the Barrios
ECIP	Employee Compensation on Insurance Premium
FHSIS	Field Health Service Information System
GSIS	Government Service Insurance System
HEI	higher education institution
HHRDB	Health Human Resource Development Bureau
HRDU	Human Resource Development Unit
HRH	human resources for health
HRHMP	Human Resources for Health Master Plan
HRMO	Human Resources Management Office
HSRA	Health Sector Reform Agenda
IMR	infant mortality rate
LGU	local government unit (provinces, municipalities and cities)
MDG	Millennium Development Goal
MMR	maternal mortality rate
MPPUP	Medical Pool Placement and Utilization Program
NCR	National Capital Region
NDHRHIS	National Database on Human Resources for Health Information System
NHIP	National Health Insurance Program
PDP	Philippine Development Plan
PHIC	Philippine Health Insurance Corporation
PIPH	Province-wide Investment Plan for Health
POEA	Philippine Overseas Employment Administration
PRC	Professional Regulation Commission
RHU	rural health unit
RHMPP	Rural Health Midwife Placement Program
RHTPP	Rural Health Team Placement Program
RNheals	Registered Nurses for Health Enhancement and Local Service
TESDA	Technical Education and Skills Development Authority
TWC	Technical Working Committee
UHC	Universal Health Coverage
WHO	World Health Organization

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1. Introduction

1.1 Geographic and demographic characteristics

The Philippines is an archipelago of 7107 islands located in the western part of the Pacific Ocean off the coast of South-East Asia. About 1200 islands are inhabited and 3144 islands have been named. The country has a total land area of 299 764 square kilometres (km^2) and is one of the largest island groups in the world. The two biggest islands are Luzon in the north and Mindanao in the south. Lying between Luzon and Mindanao are small- to medium-sized islands collectively called the Visayas. The Philippines has a tropical wet climate dominated by a rainy season and a dry season.

The population of the Philippines, as reported in the 2010 Census of Population and Housing (National Statistics Office, 2010), was 92 337 852. The population density was 308 per km^2. Household population for this census period was 92 097 978, with an average household size of 4.6 persons. On average, the population grew at a rate of 1.90% per year from 2000 to 2010. The populace is unevenly distributed throughout the islands, with most of the population concentrated on the island of Luzon, particularly in the National Capital Region (NCR). The *World Population Prospects* reported a Philippine urban populace of about 49.1% in 2011 (United Nations, Department of Economic and Social Affairs, 2011).

Data on age distribution show a young population, with children aged 0–14 years comprising 33.4% and the elderly (60 years and over) making up only 6.8%. For every 100 persons in the working-age population, there are about 61 dependents (54 young dependents and seven elderly). The male-to-female sex ratio is 1.02:1.00. Life expectancy at birth (medium assumption) is 68.81 years for males and 76.34 years for females. The overall median age is 23.4 years.

Vital statistics of the country show that the total fertility rate decreased from 3.5 in 2003 to 3.1 in 2010, with wide urban (2.7) to rural (3.6) variations. The infant mortality rate reported in the four years preceding the 2011 Family Health Survey was 22 children for every 1000 live births. For the same period, the under-five mortality rate was 30 deaths per 1000 live births. The 2011 survey suggests a declining pattern in childhood mortality for the past 18 years.

1.2 Sociocultural characteristics

Most Filipinos descend from Malays, who settled in the country around 3000 BC. The Malays later intermixed with Chinese and Indian settlers, who initially came to trade with the island people around 900 AD. With Spanish and American colonization, the intermixing of races has given rise to the modern Filipinos, who are a product of the blending of western and eastern influences.

In terms of religion, 82.0% of Filipinos are Catholics, 5.4% are Protestants, 4.6% are Muslims and the rest belong to other Christian and non-Christian religions. The predominant languages are Filipino, the national language based in the Tagalog language, and English, which is considered the language of business and education. There are more than 110 ethnolinguistic groups with eight principal languages spoken by the majority of Filipinos: Tagalog, Cebuano, Ilocano, Pampango, Bicol, Ilongo, Pangasinense and Waray.

1.3 Political environment

The Philippine bureaucratic system operates under a presidential form of governance, wherein three branches of government cooperate and collaborate with one another: Executive Branch, Legislative Branch, and Judicial Branch. The Constitution guarantees direct election by the people for all elective positions, from the president down to the *barangay* (village) council members. In May 2010, the country elected the 15th president of the Philippines, President Benigno “Noynoy” Aquino, who has a fixed term of six years.

The Philippines is divided into local government units (LGUs). Provinces are the largest LGUs in the governmental structure of the country. These are subdivided into cities and municipalities, which are composed of *barangays,* the smallest LGUs. Provinces are grouped into regions that serve primarily to organize and manage the cities and municipalities that have homogeneous characteristics, such as ethnic origin of inhabitants, dialect spoken, agricultural produce and other similar traits.

1.4 Current economic situation

The Philippine economy posted significant economic growth from 2000 to 2009, with the gross national product (GNP) growing on average of 4.5% per year. In 2010, the Philippines posted 7.3% growth in its gross domestic product (GDP) and 9.5% in its GNP. The economy weathered the 2008–2009 global recession better than its regional peers, possibly due to the country's minimal exposure to troubled international securities, lower dependence on exports, relatively resilient domestic consumption, large remittances from around 5 million overseas Filipino workers, and a growing business process outsourcing industry (Central Intelligence Agency, 2012). In 2011, GDP was 9 735 521 trillion Philippine pesos (National Economic and Development Authority, 2011). The significant growth was spurred by the global economic recovery, election-related activities and the continuous increase in remittances from Filipino workers overseas.

The Philippines is the 12th most populated country in the world, yet it is only the world's 47th largest economy. Economic growth is fuelled by large remittance inflows from Filipino overseas workers. Data indicate that the share of overseas worker remittances to the gross national income (GNI) over the past 10 years has been substantial, ranging from 7.9% to 10.0%, and it has kept the Philippine economy afloat in times of economic crisis. At the height of the global financial crisis in 2009, the economy narrowly escaped recession, growing by 1.1% when most of its neighbouring countries' economies contracted. Despite this growth, poverty worsened because of a high population growth rate and inequitable distribution of income.

Using the "US$ 1.25 a day" poverty threshold, the Philippines has a headcount poverty index of 22.6% (adjusted for 2005 purchasing power parity). Compared to other Association of Southeast Asian Nations (ASEAN) countries, the Philippines ranked better than Cambodia (40.2%) and the Lao People's Democratic Republic (35.7%), but trailed behind Indonesia (21.4%), Malaysia (0.5%) and Thailand (0.4%).

The Philippine Development Plan (PDP) for 2011–2016 targets poverty reduction and faster economic growth. The Administration of President Aquino is working to reduce the government deficit, which was 3.9% of GDP when it took office, to 2.0% of GDP by 2013. Given this target, the social development sector of PDP 2011–2016 is focussed on ensuring an enabling policy environment for inclusive growth, poverty reduction, and convergence of service delivery, maximized synergies and active multi-stakeholder participation. Priority strategies include: (1) attaining the Millennium Development Goals (MDGs); (2) providing direct conditional cash transfers to the poor; (3) achieving universal coverage in health and basic education; (4) adopting a community-driven development approach; (5) converging social protection programmes for priority beneficiaries and target areas; (6) accelerating asset reform; (7) mainstreaming climate change adaptation and disaster risk reduction in social development; (8) mainstreaming gender and development; (9) strengthening participation of the civil society sector and public–private partnerships; (10) adopting volunteerism; and (11) developing and enhancing competence of the bureaucracy and institutions.

1.5 Summary of main health indicators

The PDP 2011–2016 summarized the country's health status in terms of its progress towards attaining the MDGs. While the Philippines is on target for most of its MDGs (child health, disease control and sanitation), it lags behind on improving maternal health and combating HIV/AIDS. The maternal mortality ratio (MMR) and infant mortality rate (IMR) are still high, considering that MDG targets for MMR and IMR are 52 and 19, respectively.

Based on the Family Health Survey of 2011, IMR was 22 per 1000 live births during the period 2007–2011, and MMR was 221 per 100 000 live births, worsening from the 162 registered during the period 2000–2005. The Philippines is one of 42 countries accounting for 90% of global under-five deaths. The under-five mortality rate (U5MR) was 30 per 1000 live births during the 2007–2011 period. The leading causes of under-five mortality are neonatal problems, bacterial sepsis of newborn, respiratory disease and pneumonia. Figures from 2006 to 2008 show a steady increase in neonatal deaths that are mostly preventable.

The leading causes of mortality were mainly noncommunicable diseases. Statistics from 2007 to 2009 show that diseases of the heart, cerebrovascular diseases, malignant neoplasms, chronic respiratory diseases and diabetes continue to be among the top 10 killers in the Philippines.

For communicable diseases, the MDG target for the tuberculosis case detection rate has been met using directly observed treatment, short-course (DOTS) strategy, while a total of 22 provinces were declared

Leading causes of infant mortality[1]	2006	2007	2008
All causes	21 764	21 720	22 351
Bacterial sepsis of newborn	3194	3506	3605
Respiratory distress of newborn	2400	2434	2577
Pneumonia	1947	2075	2348
Disorder related to short gestation and low birth weight, not elsewhere classified	1608	1816	1541
Congenital pneumonia	1290	1117	1311
Congenital malformation of the heart	1046	1435	1579
Neonatal aspiration syndromes	a	1071	1082
Other congenital malformations	1046	960	933
Intrauterine hypoxia and birth asphyxia	1005	1008	892
Diarrhoea and gastroenteritis of presumed infectious origin	984	908	937
All other causes	5736	5390	5546

Leading causes of mortality[2]	2006	2007	2008
Diseases of the heart	88 314	92 133	100 908
Cerebrovascular diseases	48 969	51 275	56 670
Malignant neoplasms	44 399	42 262	47 732
Pneumonia	35 509	39 707	42 642
Tuberculosis	23 994	24 569	25 470
Chronic lower respiratory diseases	21 149	21 859	22 755
Diabetes mellitus	21 015	22 778	22 345
Assault	12 558	12 477	12 227
Certain conditions originating in perinatal period	12 502	12 565	11 514
Nephritis, nephrotic syndrome and nephrosis	12 231	12 538	13 799
All other causes	121 316	125 418	124 758

Leading causes of morbidity	2006	2007	2008
Pneumonia	670 231	605 471	780 199
Diarrhoeal diseases	572 259	539 701	434 445
Bronchitis	538 990	487 302	519 821
Hypertension	408 460	398 538	499 184
Influenza	339 881	349 609	362 304
Tuberculosis (all forms)	132 729	114 714	143 807[b]
Diseases of the heart	38 482	31 331	32 541
Dengue fever	15 279	23 773	a
Malaria	22 284	23 207	a
Chickenpox	18 326	23 090	25 677

Notes:
1 2000 Census-based population projections.
2 Based on civil registration. Not adjusted for under-registration.
a Not a leading cause of death.
[b] Source for 2008: Tuberculosis Control Program of the Infectious Disease Office, National Center for Disease Prevention and Control.

Sources: National Statistics Office, *Family Planning Survey, National Demographic and Health Survey,* Department of Health, Professional Regulation Commission, Department of Social Welfare and Development, Government Service Insurance System, Social Security System.

malaria-free in 2008. Although the number of HIV cases has been increasing gradually and has shown a steep increase in the last four years, the prevalence of HIV and AIDS remains below 1% of the total population.

1.6 Health systems

Continuing with the gains accomplished in implementing health sector reforms in the Philippines, the Aquino Health Agenda (AHA) is concentrating on the achievement of Universal Health Care (UHC). The AHA was launched through Administrative Order 0036 with the main goal to "improve, streamline and scale up reform interventions espoused in the Health Sector Reform Agenda (HSRA) and implemented under Fourmula One (F1) for health," with particular focus on the poor. UHC is directed towards ensuring the achievement of better health outcomes, fair health financing and a responsive health system that will provide all Filipinos, especially disadvantaged groups, with equitable access to quality health care (World Health Organization, 2011).

The strategic thrusts in implementing UHC are as follows:

- protect the poor from the financial burden of health care by improving the benefit delivery ratio of the National Health Insurance Program (NHIP);
- improve access to quality hospitals and health care facilities by upgrading or expanding government-owned and -operated hospitals and health facilities as well as providing quality services to help attain the MDGs; attending to traumatic injuries and other types of emergencies; and managing noncommunicable diseases and their complications; and
- attain the MDGs for health by focusing public health programmes on maternal and child mortality; morbidity and mortality from tuberculosis, dengue and malaria, and the prevalence of HIV/AIDS, in addition to emerging diseases; and prevention and control of noncommunicable diseases, particularly cardiovascular diseases, cancer, diabetes mellitus, and end-stage renal disease.

The PDP 2011–2016 reported that the slow rate of progress in the social sector might be partly attributed to the compression of expenditure at the national level in the previous years, in response to balancing the budget due to declining revenue efforts. In health care financing, the Philippine National Health Accounts recorded the total health expenditure in 2007 at only 234.3 billion Philippine pesos or 3.5% of GDP. In 2009, health expenditures rose slightly to 3.8% of GDP. Both the 2007 and 2009 health expenditures are below the World Health Organization's benchmark of 5% of GDP for developing countries. However, when compared to other sectors, the government allocation for health is a little bit higher than education, which got 2.8%of GDP in 2008.

Social services received more that 31.7% of the national budget, while economic services (infrastructure, agriculture, natural resources, tourism, and research and development) got 22%; general public services, 17.5%; and defence, 6.2% (Department of Budget and Management, 2011).

1.7 Health service delivery system and administration

The Philippine health delivery system involves not only the Department of Health, but also LGUs and private institutions. Private sector involvement in health service provision is far reaching in the Philippines, stretching into health service delivery in clinics and hospitals, health insurance, manufacture and distribution of medicines, vaccines, medical supplies, equipment, nutrition products, research and development and other health-related services. Private sector health care providers, consisting of for-profit and not-for-profit entities, are largely market-oriented and offer health services that are paid for at the point of service.

With the passing of the Local Government Code of 1991, the primary task of health service delivery was devolved to about 1600 LGUs. The decentralization of health services emphasized the important role of LGUs, specifically provinces, municipalities and cities, in the provision of health care. It required the LGUs to formulate and implement local health policies related to health and wellness, sanitation, nutrition and other health concerns in accordance with national policies and standards. To maximize the use of limited resources, basic health care services delivery was organized across inter-local health zones (or health districts) that share the responsibility of health services provision (Grundy et al, 2003).

The Department of Health, on the other hand, assumed the role of policy-maker and regulator of health facilities and services in both the private and government sectors as mandated by Executive Order 102 (Office of the President, 1999). To address the challenges of devolution, the Department of Health developed the Health Sector Reform Agenda in 1999 to provide a policy framework for reforms. To implement

the reform strategies, the *FOUR*mula *ONE* for Health approach was introduced in August 2005 to articulate the way health care should be delivered, governed, regulated and financed. The Department of Health has been leading the way in promulgating health policies, including quality standards that health facilities have to comply with and that are also being utilized to license such facilities (Department of Health, 2009).

Under this health system, public health service delivery is largely financed through a tax-based budgeting system at the local and national levels; public health care is generally provided free of charge at the point of service (Lorenzo et al, 2011). In recent years, socialized user charges have been introduced for certain types of services that are offered by specialty hospitals. The public sector health care facilities can be categorized as: (1) *national* government health facilities, including hospitals retained by the Department of Health and hospitals under the Department of National Defence; (2) *provincial* government health facilities, including provincial and district hospitals; and (3) *local* government health facilities, consisting of municipal or city hospitals, rural health units (RHUs), city health centres and *barangay* health stations (BHS).

The next three tables show the number of Department of Health-retained hospitals, licensed government hospitals and licensed private hospitals and their corresponding authorized bed capacity as of 2010.

Table 1. Hospitals retained by the Department of Health, 2010

Type of hospital	Number	Number of beds
Specialty hospitals	4	914
Special hospitals	7	6385
Research	2	75
Medical centres	22	6700
District hospitals	5	420
Regional hospitals	16	2564
Sanitaria hospitals	8	2845
Extension hospitals	4	72
Philippines (total)	**68**	**19 975**

Source: Bureau of Health Facilities and Services, Department of Health, 2010.

Table 2. Licensed government hospitals, 2010

Type of hospital	Number	Number of beds
Infirmary	370	7267
Primary	268	14 906
Secondary	42	6079
Tertiary	50	21 119
Philippines (Total)	**730**	**49 371**

Source: Bureau of Health Facilities and Services, Department of Health, 2010.

Table 3. Licensed private hospitals, 2010

Type of hospital	Number	Number of beds
Infirmary	411	5704
Primary	415	12 221
Secondary	187	15 901
Tertiary	69	14 957
Philippines (total)	**1082**	**48 783**

Source: Bureau of Health Facilities and Services, Department of Health, 2010.

In the Philippines, there are more licensed private hospitals (1082 as of 2010) servicing the population than licensed government hospitals (730 including 68 speciality hospitals). However, public hospitals are generally larger than private hospitals; hence, the majority of available hospital beds are found in government hospitals. Apart from private hospitals, the number of other health facilities in the private sector remains undocumented. As for public health facilities, there are 2296 RHUs and 11 537 BHS sprawled throughout the country. Both types of facilities are under the supervision of LGUs. Department of Health Administrative Orders 70 and 147 and Sentrong Sigla Standards provide standards for human resources for health for these hospitals and public health facilities.

2. Health workforce supply and trends

The existing information on health workforce supply and trends cannot account for the actual number of health professionals and workers, including support health workers and traditional healers. The data used in preparing most of the tables in this report, including Table 4 below, were extracted from the National Database on Human Resources for Health Information System (NDHRHIS), which is populated and maintained by the Department of Health's Health Human Resource Development Bureau (HHRDB). Data are limited to nine

Table 4. Number of health workers by occupational category/cadre

Health occupational category/cadre	2011	
	Number	Number of health workers per 1000 population
Doctor	18 395	0.19921
Nurse	30 172	0.32676
Midwife	14 563	0.15771
Dentist	1723	0.01866
Nutritionist-dietician	982	0.01063
Pharmacist	3097	0.03354
Occupational therapist	102	0.0011
Medical technologist	5063	0.05483
Physical therapist	492	0.00533
Total	**74 589**	**0.80778**

Source: NDHRHIS, as of 31 December 2011 (www.hhrdb.gov.ph/ndhrhis), and Census 2010.

occupational categories and are sourced from public and private health facilities in the country.

Another supplier of data on HRH supply, including Table 5, is the Field Health Service Information System (FHSIS), which is regularly maintained and updated by the National Epidemiology Center of the Department of Health. Main sources of FHSIS information are field reports from LGUs, particularly public health facilities in *barangays*, municipalities, cities and provinces. Since no LGU-employed HRH database could be found, municipal and provincial HRH data were obtained through the Department of Health's regional offices.

The NDHRHIS database is focused on big health facilities, like government hospitals, while the FHSIS database mainly refers to health facilities linked with LGUs. However, we cannot assume that combining both datasets will provide us the total number of health workers at the national level, since data are overlapped to some point and both datasets provide only partial coverage of the total health workforce they refer to. Similarly, ratios in Tables 4 and 5 should be considered carefully as a consequence of these remarks.

Based on FHSIS data from 2007 to 2010 on HRH supply at the local level, there was a decrease in the number of doctors, medical technologists, sanitary engineers/inspectors and nutritionists/dieticians, with the latter exhibiting the biggest reduction in number. The quantity of other medical workers servicing LGUs has more or less remained constant (Department of Health, 2007–2010). It is interesting to note the significant increase in *barangay* health workers (BHWs) from 2007 to 2010. BHWs serve on a volunteer basis and play a significant role in the delivery of health care services in local communities.

While the Philippines is purportedly the leading exporter of nurses and the second major exporter of physicians, there are still shortages of doctors and nurses in the rural areas of the country (Department of Health, 2006a). Poor working conditions and low salaries in the rural communities, particularly those classified as geographically isolated and depressed areas, explain the unfilled health worker positions in rural health care facilities. Current realities include unmanaged emigration of health professionals, imbalance in the distribution of health staff, fast turnover of experienced staff, and unemployment of new graduates who lack the required competencies for health care. This complex situation is compounded by a weak human resources for health (HRH) information system that is unable to supply useful information on the status of new graduates of medicine and other health-related courses, and to provide updated data on registered health professionals who are active participants of the workforce (Department of Health, 2005a).

Limitations in sourcing HRH workforce statistics

The process of collecting and compiling information on HRH supply and trends has been difficult and tedious since no system is in place to integrate HRH information and to regularly maintain a unified database. Many government agencies have data on health workers but they were gathered for specific use and purposes and are therefore not regularly updated (e.g. the Philippine Overseas Employment Agency maintains a database of board passers for the purposes of the Philippine-Japan Economic Partnership Agreement, while the Professional Regulation Commission [PRC] maintains a list of foreign health professionals who requested permission for limited local practice).

Efforts are under way to develop a unified or an integrated database of health worker demographics that will generate statistics on HRH supply and demand. The Department of Health, together with other government agencies that generate data on HRH (e.g. Commission of Higher Education, Department of Interior and Local Government, Department of Labor

Table 5. Supply of human resources for health (based on data received from LGUs covering city and municipal health centres)

Health occupational categories/ cadres	2007		2008		2009		2010	
	Number	Number of HRH / 1000 population	Number	Number of HRH / 1000 population	Number	Number of HRH / 1000 population	Number	Number of HRH / 1000 population
Population	88 574 614		90 457 200		91 048 652		92 337 852	
Doctor	3047	0.0344	2838	0.0313	2901	0.0318	2682	0.029046
Nurse	4577	0.0516	4576	0.0505	4729	0.0519	4495	0.04868
Midwife	16 821	0.1899	17 437	0.1927	16 611	0.1824	16 875	0.182753
Dentist	1894	0.0213	1891	0.0209	1991	0.0218	1718	0.018606
Nutritionist-dietician	1143	0.0129	1704	0.0188	326	0.0035	314	0.003401
Medical technologist	1717	0.0193	1767	0.0195	1677	0.0184	1380	0.014945
Sanitary engineer/ inspector	3048	0.0344	3921	0.0433	3006	0.0330	2618	0.028352
Active barangay health worker	99 546	1.1238	214 326	2.3693	212 026	2.3287	173 369	1.877551
Dental aide	1449	0.0163	1188	0.0131	-	-	-	-
Trained birth attendant	39 537	0.4463	38 155	0.4218	-	-	-	-
Non-technical	7917	0.0893	4587	0.0507	-	-	-	-
Total	**180 696**	**2.0395**	**292 390**	**3.2319**	**243 267**	**2.6715**	**203 451**	**2.2033**

Source: *FHSIS Annual Reports*, National Epidemiology Center, Department of Health, 2007–2010.

and Employment and PRC), is expected to contribute to populating the integrated database. At present, public and private health facilities in the country have started online updating of the Department of Health's NDHRHIS. However, several limitations of NDHRHIS still need to be addressed, namely:

- it contains only 61% of the 1812 Department of Health-licensed facilities (730 are government-owned hospitals and 1082 are privately owned facilities);
- for government-owned hospitals, 71% (519) have provided their data to the NDHRHIS;
- for privately owned facilities, 54% (579) have contributed to the database;
- registered users from the 1098 contributing facilities make up only 45% of the total number of expected users; and
- as of 31 December 2011, the system had validated only 70% of HRH data from contributing health facilities—data cleaning is an ongoing activity.

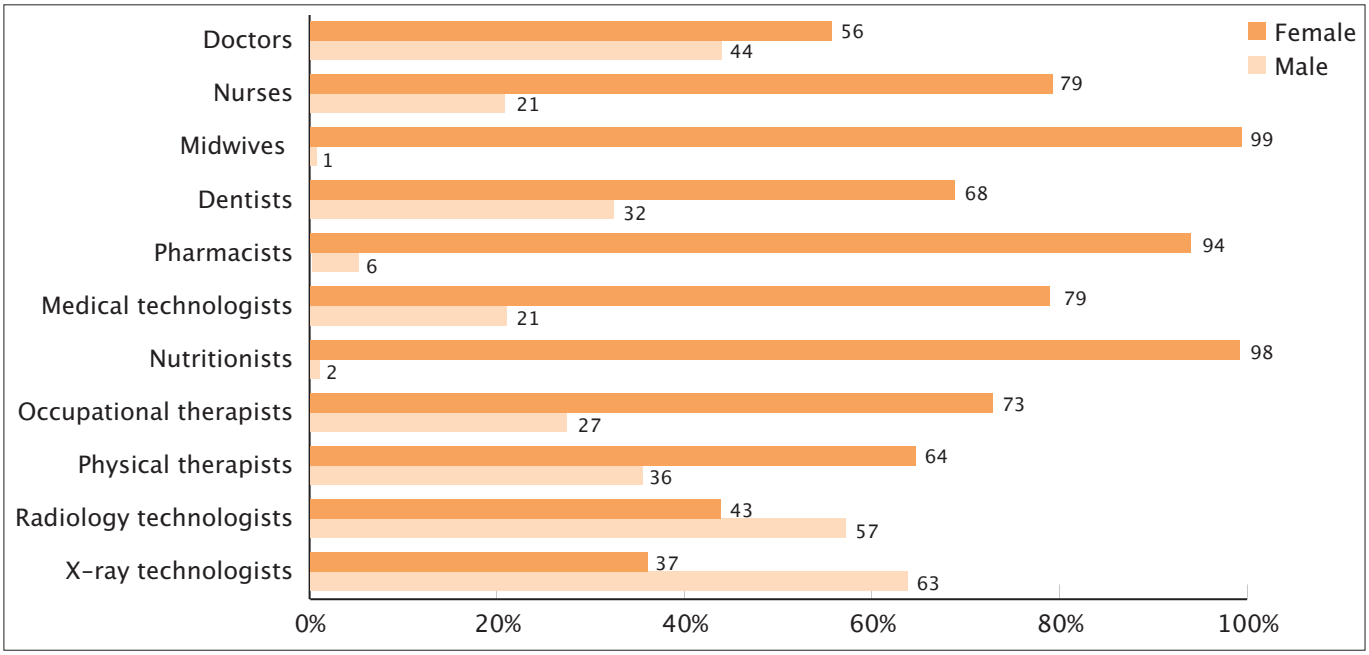
3. Health workforce distribution

The next set of tables and figures present the distribution of health workers by gender, age group, region and public–private affiliation. Since data on skills distribution were not available, information was drawn from the performance of applicants in passing board examinations for licensing in the practice of their profession.

3.1 Gender distribution

Figure 1 uncovers a preponderance of females in most health professions in the Philippines. Of the total number of doctors working in public and private facilities in the country, there are 9553 females (56%) and 7568 males (44%). The data further show that females account for 24 123 or 79% of the total nurse

Figure 1. Gender distribution by health occupation (shown in percentages for each category)



Source: NDHRHIS, Department of Health, HHRDB, 31 December 2011.

population of 30 504. The proportion is even higher for midwives, where 99% of the total 14 614 midwives are females. The same trend is true for nutritionists (956 or 98% are female) and pharmacists (2868 or 94% are female). The only categories that have more males than females are radiology technologists (423 or 57%) and X-ray technologists (139 or 63%). (Please refer to Annex D for total numbers by occupation and gender.)

3.2 Age group distribution

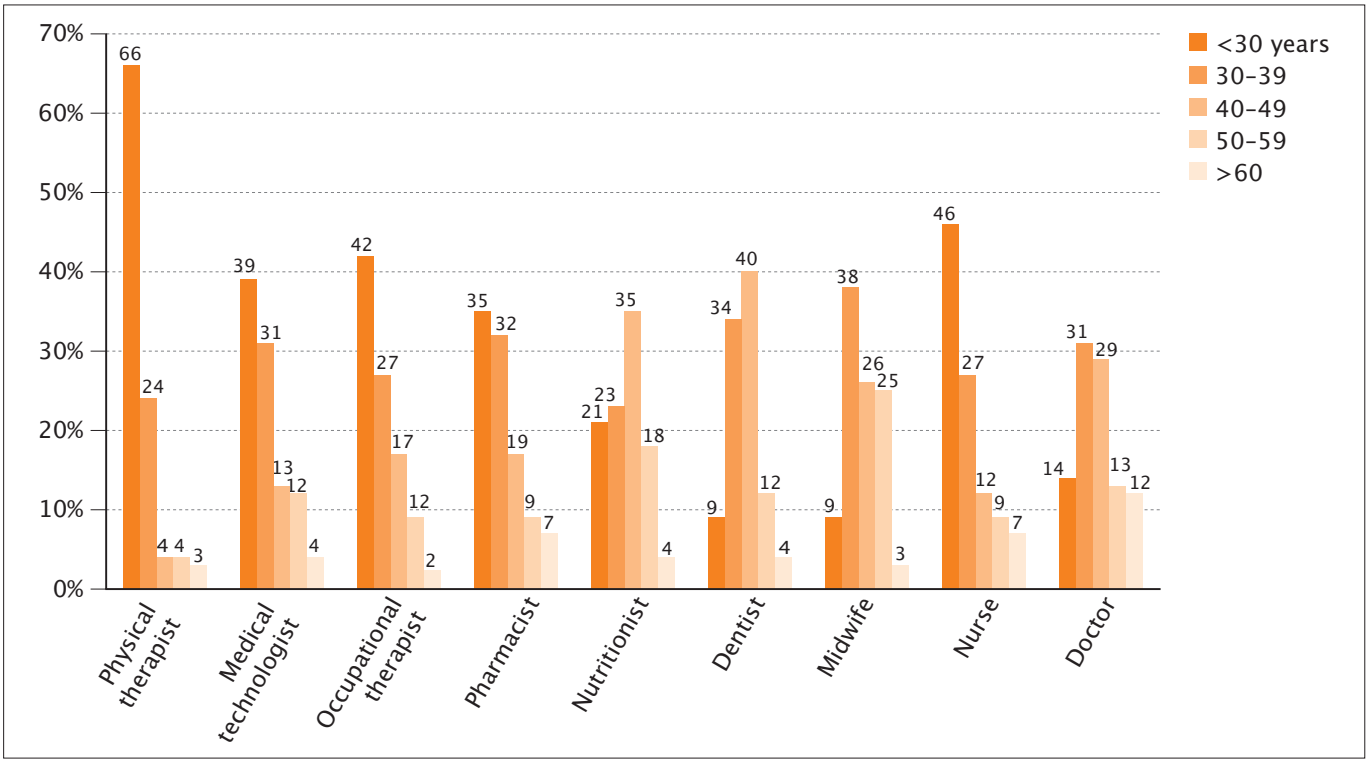
Seventy-nine per cent of health workers in the Philippines are under 49 years of age. The 30–39 year age group, with 20 479 health workers, accounts for 31% of the total health workforce. The second largest group of health workers, totalling 18 512 or 28% of the total, are under 30 years of age. Health workers in the 40–49 age group total 13 507 or 20% of the total. Of the remaining 21% that are 50 years old and above, senior citizens (60 years and older) comprise 4693 or 7% of health workers. (Please refer to Annex E for total numbers by occupation and age group).

3.3 Distribution by region

In the Philippines, 60%–70% of all medical practitioners work in urban areas (Department of Health, 2005a). Out of 7671 government doctors in 2005, 2761 (36%) were working in the National Capital Region, while estimates show that the remaining regions averaged only about 300 doctors per region. The Autonomous Region in Muslim Mindanao (ARMM) and Caraga, two of the poorest rural regions, had only 89 and 76 doctors, respectively (De Guzman, 2005). One reason cited for this situation is unappealing working conditions in the rural communities, particularly in geographically isolated and depressed areas, where isolation, shortness of medical equipment and supplies, and deficiency in cultural stimulation are experienced. Other reasons, which have been observed in other countries but also apply to the Philippines, are: lack of employment and educational opportunities for family members; poor resources used in practice; and absence of training and tertiary care facilities in the rural areas (Wibulprasert and Hempisut, 2004).

Department of Health statistics, as of December 2011, present almost the same situation as described in 2005. NDHRHIS data reveal that out of the 24 173 recorded doctors in the entire country, about 10 833 or 45% are practising in urbanized regions. The top three regions are NCR with 4029 doctors, Central Luzon with 3553 doctors, and South Luzon consisting of CALABARZON provinces with 3251 physicians. These numbers are in stark contrast to the numbers of doctors working in poor, rural regions. Out the 1091 doctors or 4.5% who are practising in rural areas, Zamboanga Peninsula has 567 doctors, Caraga has 462, and ARMM has only 62 (Annex A – Regional distribution of health workers).

Figure 2. Health workers by age group and cadre (shown in percentages for each category)

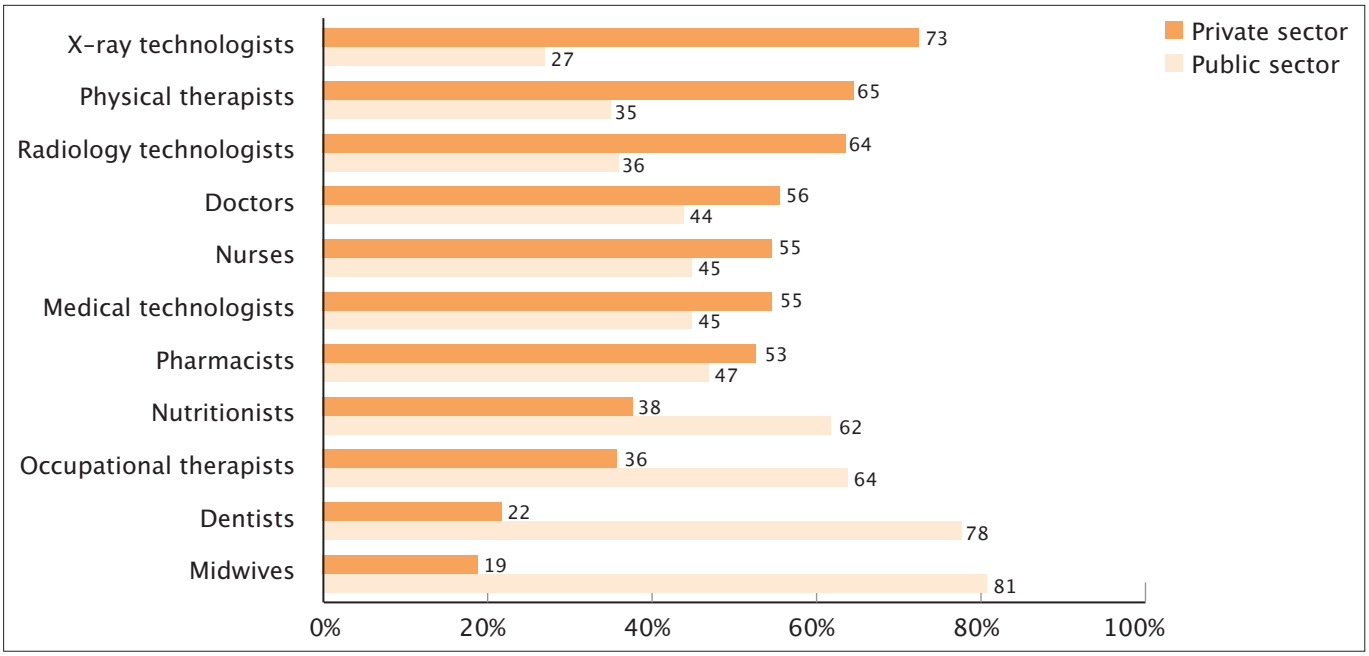


Source: NDHRHIS, Department of Health, HHRDB, 31 December 2011.

3.4 Public–private sector distribution

In terms of public–private distribution of health workers, data show an almost even distribution in public and private hospitals of doctors (44% in the public sector and 56% in the private sector), nurses (45% in public and 55% in private), pharmacists (47% in public and 53% in private) and medical technologists (45% in public and 55% in private). However, there are more radiology technologists (64%), physical therapists (65%) and X-ray technologists (73%) in the private sector. As expected, 81% of midwives work

Figure 3. Public vs. private distribution of health workers (shown in percentages for each category)



Source: NDHRHIS, Department of Health, HHRDB, 31 December 2011.

in government health facilities, with most of them assigned to BHS and RHUs (Annex B – Public vs. private sector distribution of health workers).

3.5 Place of practice and affiliation of HRH

The NDHRHIS contains the aggregate number of selected health workers and health care providers in the private and public sectors across the 17 political regions of the country, as well as their place of practice within and/or outside their regions (Annex C – Place of practice by public and private health providers by region). Out of 23 613 doctors found in the 17 regions, 560 have multiple facility affiliations within the region where they practise or another region. Other health care providers with multiple facility affiliations within their region or another region are nurses, midwives and medical technologists. None of the other health professionals (dentists, physical and occupational therapists, nutritionists and dieticians) reported any other facility affiliation within their region or another region.

4. Health professions education

Under Republic Act No. 7722, the Commission on Higher Education (CHED) is mandated to promote quality education, broaden access to higher education, protect academic freedom for continuing intellectual growth, and ensure advancement of learning and research. Under the overall supervision of CHED, access to higher education in the Philippines is provided by both private and public higher education institutions (HEIs).

Private HEIs may be classified as non-sectarian and are owned and operated by private entities that are not affiliated to any religious organization, while those classified as sectarian are usually non-stock and non-profit entities. Both types are duly incorporated under the Corporation Code of the Philippines. In general, private HEIs are covered by the policies, standards and guidelines set by CHED in terms of programme offerings, curricula, administration and faculty academic qualifications, among others.

Public HEIs are state universities and colleges, local universities and colleges, and other special government schools. State universities and colleges are chartered

Table 6. Distribution of higher education institutions by region and sector

Region	Public						Private	Total
	State schools			Local schools	Others	Total		
	Main	Satellite campuses	Sub-total					
I	6	21	27	3	-	30	83	113
II	5	18	23	1	-	24	149	73
III	12	35	47	12	1	60	72	232
IVA	5	54	59	13	1	73	202	275
IVB	6	41	47	1	-	48	41	89
V	8	23	31	16	-	47	104	151
VI	11	54	65	9	1	75	79	154
VII	5	23	28	8	-	36	120	156
VIII	10	28	38	3	1	42	58	100
IX	6	43	49	-	-	49	52	101
X	6	31	37	6	-	43	65	108
XI	4	8	12	4	-	16	81	97
XII	4	11	15	-	1	16	79	95
Caraga	4	9	13	1	-	14	43	57
NCR	8	7	15	16	3	34	289	323
CAR	6	14	20	-	1	21	36	57
ARMM	4	4	8	-	7	15	51	66
Total	**110**	**424**	**534**	**93**	**16**	**643**	**1604**	**2247**

Source: CHED, 2011.

public HEIs established by law and administered and financially subsidized by the government. Local universities and colleges are established by the local government through resolutions or ordinances and are financially supported by the local government concerned. Special HEIs provide specialized training in areas such as military science and national defence and fall under the responsibility of the government agency that created them. Other public HEIs offer post-secondary education, usually technical vocational programmes.

The issuance of permit and recognition to offer baccalaureate programmes in all disciplines has been decentralized by the CHED Central Office to the regional offices. However, the issuance of permit and recognition to offer graduate programmes and baccalaureate programmes in *nursing, medicine* and maritime is still done at the Central Office, through the Office of Programs and Standards. CHED is also mandated to regulate the establishment and operation of review centres and similar entities.

As of August 2011, the Philippines had 2247 HEIs. Private HEIs accounted for 1604 or 71.39%, while 643 or 28.61% were public HEIs. Government institutions included the following: 110 state universities and colleges with 424 satellite campuses; 93 local colleges and universities; and 16 special government schools, including the Philippine Military Academy, National Defense College and Philippine Maritime Academy (CHED, 2011).

As part of its policy formulation, CHED has designated disciplines that HEIs must prioritize, namely: *sciences*, *medicine and health-related programmes*, maritime, engineering and technology, agriculture, agri-engineering, forestry and veterinary medicine, teacher education, IT related, mathematics, architecture and town planning. CHED also comes up with higher education indicators for monitoring purposes such as statistics on entrants and graduates of HEIs. No disaggregated data is available on sciences and health-related programmes.

For the academic year 2010–2011, total enrolment in all disciplines was 2 937 847. Among these enrolees, 1 193 851 entered public HEIs, while 1 743 996 went to private HEIs. Furthermore, 1 728 397 enrolees chose priority disciplines, including *sciences*, *medicine and health-related* programmes. Graduates in all disciplines numbered 500 783, while those from the priority disciplines accounted for 329 182.

While there is an escalating trend in the number of entrants for all disciplines, a decreasing trend can be seen in *medicine and health-related programmes*. Enrolment in these programmes declined by 33.68% from 2007–2008 to 2010–2011, most notably because of the sudden drop in enrolment in nursing schools, which had peaked in 2005–2009. With the decline in nursing opportunities in the European Union, United Arab Emirates, United States of America and other high-paying countries, high school graduates are being dissuaded from pursuing a nursing degree. Instead, they are encouraged to take up other courses that are needed by industry sectors such as IT, sciences, engineering and other CHED-identified priority disciplines.

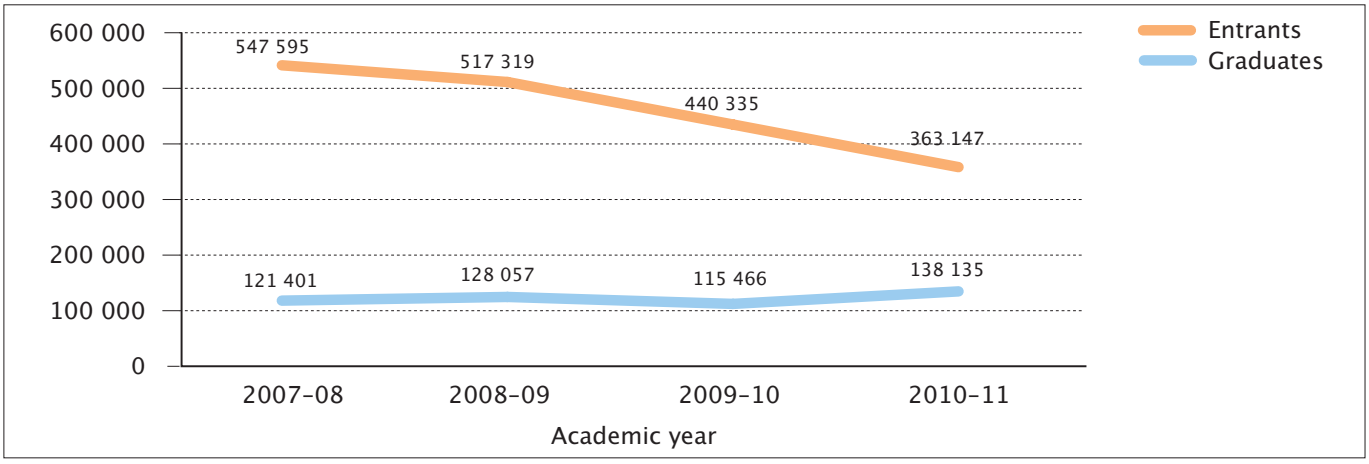
4.1 Monitoring of performance in health professions education

A mismatch between the training and skills acquired by health professionals and the skills needed by the health care system is frequently discussed in health forums. As pointed out in the Human Resources for Health Master Plan 2005–2030 (HRHMP, 2005), without the right skill set, resources are wasted and the health of the public is undermined (Davies, 1995). The HRHMP further cited a gap between the training received in the classroom and the realities in the field. A Department of Health study conducted in the Philippines in 1995 observed that the curriculum used in the country's health science schools was Western-based and did not reflect the prevailing health and disease problems in the country. In general, this type of imbalance is due to a lack of educational institutions and instructors to facilitate the training and/or the low quality of education being provided (Adams, Egger and Lipson, 2000).

One of the strategies of CHED to address the needs of the country for growth and development, as well as the demands of the international community, is to provide critical input in making higher education relevant and responsive. One such avenue has been the monitoring of school performance in licensure examinations.

This assessment seems to be supported by statistics on the declining passing rate in licensure examinations. As shown in Figure 5, barely half of the examinees who took the nursing examinations from 2000 to 2010 passed. The highest passing rates were recorded in 2001 and 2005, with 54.62% and 53.10% of examinees passing, respectively. The most dismal performance, a 37.80% pass rate, was recorded in 2010.

Figure 4. Number of entrants and graduates by year in medicine and health-related programmes



Source: CHED, 2011.

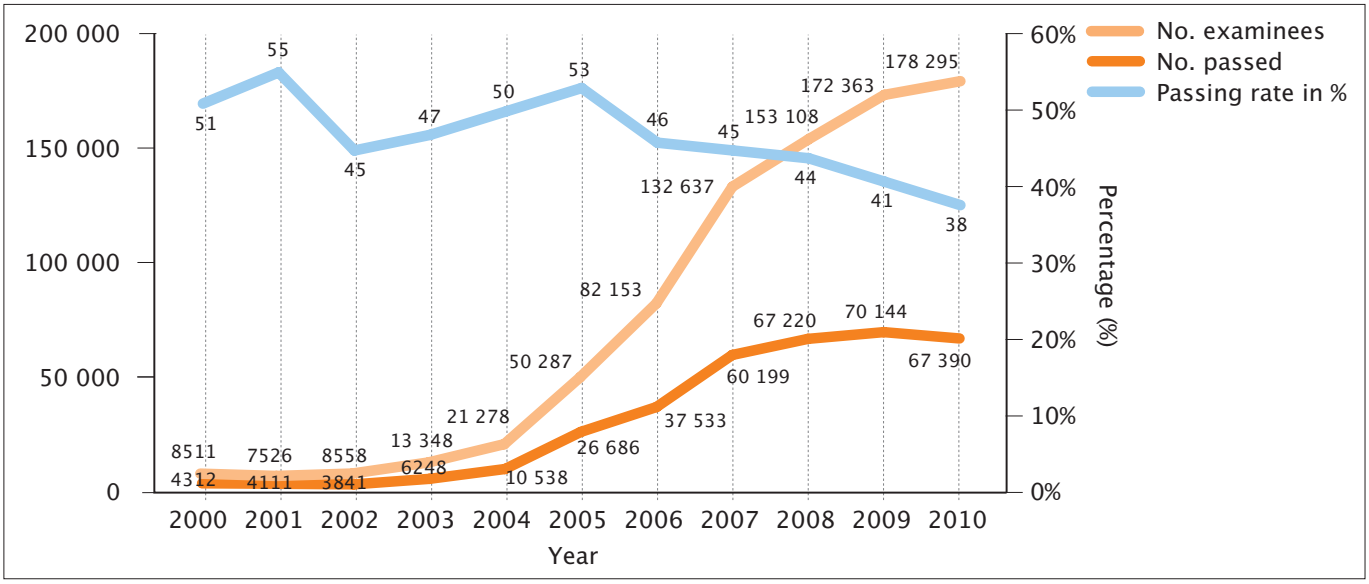
In the Philippines, CHED reported that the overall passing rate in the national licensure examinations across all disciplines slightly increased from 38.22% in academic year 2007–2008 to 38.67% in academic year 2008–2009. Among the priority disciplines, notable improvements were seen among graduates in the fields of education, agriculture, engineering and technology, and maritime; however, medicine and health-related programmes registered a decrease in the average passing rate of graduates (CHED, 2007–2009).

Furthermore, the passing performance of licensure examinations in medicine and health-related programmes is a good indicator of educational preparedness and practical knowledge of new graduates to qualify for the practice of their profession. Table 8 presents the passing performance in licensure examinations for 2011 and the first half of 2012.

Based on the 2011 figures, professionals with the highest passing marks were dentists at 96.5%, followed by optometrists at 85.7% and ocular pharmacologists at 83.3%; the bottom three performers were X-ray technologists at 25.2%, nurses at 41.5% and occupational therapists at 43.3%.

The predominance of low-performing schools has definite implications for nursing graduates, lowering their chances not only of passing licensure examinations but also of practising their profession. However, the diminished demand for nurses in well-paying countries in recent years has led nursing

Figure 5. Performance of nursing graduates at nursing board exam, 2000–2010



Source: PRC-Board of Nursing, 2010.

Table 7. Passing performance in licensure examinations

Occupational category/cadre	2011			2012		
	Examinees	Passers	%	Examinees	Passers	%
Dentists	429	414	96.5	1112	397	35.7
Medical technologists	2286	1612	60.7	1865	1521	81.6
Midwives	6553	2882	44.0	3481	1732	49.8
Nurses	145 230	60 273	41.5	*139 424	* 65 343	46.9
Nutritionists-dieticians	757	507	67.0	896	601	67.1
Occupational therapists	180	78	43.3	184	76	41.3
Ocular pharmacologists	12	10	83.3	19	18	94.7
Optometrists	63	54	85.7	352	251	71.3
Pharmacists	2471	1290	52.2	1770	1117	63.1
Physical therapists	1431	738	51.6	1494	777	52.0
Physicians	3361	2260	67.2	3127	2204	70.5
Radiology technologists	1781	954	53.6	2094	947	45.2
Sanitary engineers	105	57	54.3	105	53	50.5
X-ray technologists	262	66	25.2	307	79	25.7

Source: Professional Regulation Commission website (http://www.prc.gov.ph/news/default.aspx).
* There is a scheduled examination for nursing licensure on 17 December 2012. Since the release date will be January 2013, these results were not included in the data.

schools to adopt self-correcting mechanisms to address the drop in enrolment. This situation may augur well for the future of the Philippine health care system, as substandard nursing schools are forced to close down. The remaining better-quality colleges and universities are likewise pushed to review their performance and improve their programmes, educational facilities and hospital affiliations.

Currently, CHED is in the process of phasing out poorly performing nursing programmes (Lorenzo et al, 2011). Results of CHED's monitoring and evaluation activities are being translated into corrective and developmental policy issuances, such as the memorandum on medical education, which will help the Philippines keep pace with the demands of global competitiveness (CHED MO No. 10, Series of 2006).

4.2 Cost of health science education

It is difficult to report on the cost of education in the Philippines because of the absence of published information on school fees and the existence of an unregulated system of charging fees by HEIs. While CHED is tasked to regulate the cost of higher education, costs vary from one school to another and from one region to the next.

The latest report to the Department of Health on the assessment of HRHMP implementation (Table 8) still shows the variable cost of medical and nursing education in the country as of 2010 (based on tuition fees for the academic year 2010–2011).

Table 8. Tuition fees for health professions education

Course	Private institution	Public institution
BS Pre Med	40 000–55 000 pesos/semester	8000–13 000 pesos/semester
Medicine Proper	75 000–120 000 pesos/semester	35 000–45 000 pesos/semester
BS Nursing	8900–50 000 pesos/semester	Around 8000 pesos/semester

Source: HHRDB, 2012.

4.3 Scholarship programmes, grant-in-aid and special programmes

In order to broaden access to higher education, CHED offers four regular scholarship programmes: (1) *State Scholarship Program* for poor but academically bright Filipino college students; (2) *Private Education Student Financial Assistance Program* for providing government assistance to students and teachers in private education; (3) *Bright Mindanaoan Muslims* for the top Filipino Muslim students from Mindanao; and, (4) *Higher Education Development Project Scholarship,* which is a new system of administering student financial assistance anchored on merit-based student assessment and upgraded award ranges.

Grant-in-aid programmes include the following: (1) Study Grant for Persons with Disabilities; (2) Study Grant for Indigenous and Ethnic Peoples; (3) Study Grant for Solo Parents and their Dependents; (4) Iskolar ng Mahirap na Pamilya (indigent families are encouraged to send at least one child to post-secondary education with government financial assistance); and (5) Study Grant for Senior Citizens or elderly resident citizens (at least 60 years of age). Special programmes are also available for various interests groups such as rebel returnees, children and dependents of soldiers killed in action, etc.

The Faculty Development Program is a set of reform-oriented interventions that seeks to upgrade the academic qualifications of tertiary faculty to masters and doctorate degree levels. Since 2004, CHED has been providing scholarships for faculty to pursue masters or PhD studies in priority fields, specifically natural sciences, social sciences, English, mathematics, engineering and IT. As of December 2007, out of the total 1474 grantees, 256 who started in academic year 2004–2005 had graduated, and the remaining 1218 who started in academic year 2005–2006, academic year 2006–2007 and academic year 2007–2008 were still completing their studies under the programme.

While CHED offers financial assistance programmes for higher education in all disciplines, the Department of Health provides scholarship grants for health workers in the completion of a bachelor's degree, medical degree, post-graduate degree, and midwifery courses for licensure examinations.

4.4 Continuing professional education/ development

The Professional Regulation Commission (2010) defined continuing professional education and continuing professional development (CPE/CPD) as the inculcation, assimilation and acquisition of knowledge, skills, proficiency, and ethical and moral values that raise and enhance a professional's technical skills. The CPE/CPD programme consists of properly planned and structured activities, the implementation of which requires the participation of a determined group of professionals to meet the requirements of maintaining and improving the occupational standards and ethics of professionals.

PRC Resolution No. 2008–466 stipulates that Individual Professional Health Regulatory Boards (e.g. medicine, nursing) should have their own CPE/CPD councils that evaluate and approve and/or accredit activities (e.g. seminars, self-directed learning package).

Registered professionals will earn credit units for attending or participating in programmes and activities that are approved or accredited by the CPE/CPD council. Activities that earn credit units may be in the following forms: seminars/conventions; post-graduate formal education; self-directed learning package; authorship; inventions; post-graduate training; study/observation tour; professorial chair; and other activities to be recommended by the council and approved by PRC.

CPE/CPD programmes for health and allied professions, which are accredited by the Council of Professional Health Associations, have been designed for the following professions: dentistry, medical technology, medicine, midwifery, nursing, nutrition and dietetics, optometry, pharmacy, physical and occupational therapy, radiology technology, and veterinary medicine.

To recognize and encourage the continuing development of Filipino skilled workers and professionals, CHED promotes alternative learning systems through the following modes:

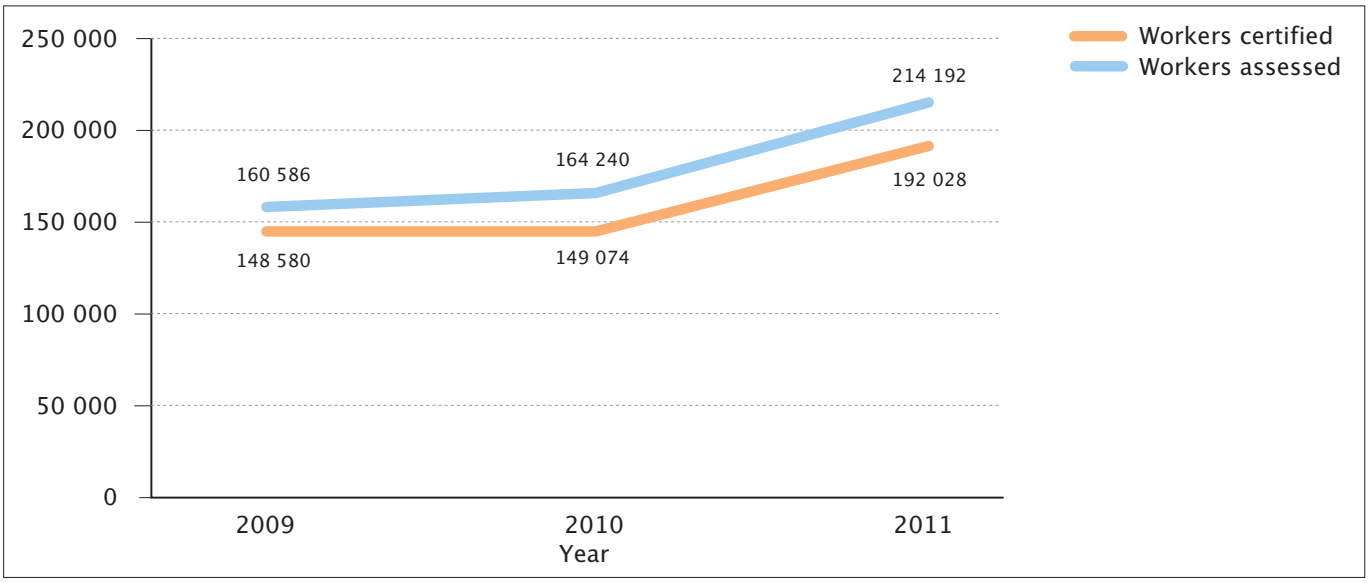
- *Expanded Tertiary Education Equivalency and Accreditation Program* is a route wherein Filipino skilled workers and professionals can have their experiences and prior learning credited towards a formal degree in higher education. The programme is being implemented in 88 deputized HEIs nationwide (64 private and 24 state universities and colleges) that have programmes with at least Level II accreditation, Center of Excellence or Center of Development status.
- *Distance Education* is a mode of educational delivery whereby the teacher and learner are separated in time and space, and instruction is delivered through specially designed materials and methods using appropriate technologies, and supported by organizational and administrative structures and arrangements. Nationwide, distance education is being offered by 17 HEIs to more than 1012 students.
- The *Ladderized Education Program,* which is another mode of earning credentials, recognizes the need of some students to seek employment even before completing college. CHED and the Technical Education and Skills Development Authority (TESDA) have identified eight discipline clusters for the development of ladderized model curricula, namely: agriculture technology, business, IT management, marine engineering, tourism management, travel

Table 9. TESDA resolutions on the certification of health-related programmes

Qualification title of health-related programmes	Board resolution No.
Health Services NC II	2005–15
Biomedical Equipment Services NC II	2006–09
Emergency Medical Services NC II	2006–09
Massage Therapy NC II	2006–09
Barangay Health Services NC II	2006–28
Caregiving NC II (amended)	2007–01
Ophthalmic Lens Services NC II	2007–59
Dental Laboratory Technology Services NC I	2008–04
Dental Laboratory Technology Services NC II (Fixed Dentures/Restorations)	2008–04
Dental Laboratory Technology Services NC II (Removable Dentures/Appliances)	2008–04
Hilot (Wellness Massage) NC II	2008–19
Pharmacy Services NC II	2008–19

Source: TESDA, 2008.

Figure 6. TESDA-certified workers



Source: CHED, 2011.

management, *nursing* and information technology. As of 2008, TESDA had passed 12 resolutions pertaining to the certification of *competency-based health-related programmes* (Table 9).

The number of TESDA-certified workers in health, social and other community services is increasing. Among the applicants assessed by TESDA, 92% were certified in 2009, 91% in 2010 and 90% in 2011 (Figure 6).

5. Human resources for health (HRH) utilization

Human resources for health are instrumental in achieving health goals set in the Philippine Development Plan 2011–2016. Health professionals and workers are the main movers of health reforms and are vital in initiating changes for the betterment of the health care system in the country. Although the Philippines is perceived as a rich source of competent and skilled HRH, particularly of doctors and nurses, the country's health care delivery system is still wanting in terms of proper deployment and utilization of its health professionals (Department of Health, 2006b).

Many trace the inequality of HRH utilization and deployment to the lack of a functioning system

of rationalizing recruitment, retention, training, development and placement of health professionals and workers. The move to correct this situation is apparently in the hands of several government and private agencies with mandates that relate to the production, regulation, utilization and deployment of HRH.

While the specific mandates of individual agencies are explicit, these organizations are not functionally integrated or organized into one coordinated body, thus appearing to be generally fragmented in the utilization of HRH. However, with the organization of the HRH Network in 2006, there have been attempts to collaborate and come up with *integrated and rational utilization policies* aimed to use available HRH efficiently through geographical redistribution, proper matching of skills with work requirements, and the utilization of multi-skilled personnel.

5.1 HRH issues and concerns

The regional consultations that took place during the crafting of the HRH Master Plan 2005–2030 confirmed the poignant situation regarding HRH recruitment and deployment at the local government level:

- There is a maldistribution of health professionals, stemming from the lack of budget for HRH position items, resulting from the absence of a rational recruitment and deployment system.
- Almost all LGU regular positions (*plantilla*) have been filled, but the numbers are still inadequate; many LGUs do not fill all regular positions but instead hire casual employees to decrease unit/facility costs.
- There are many unfair labour practices such as the "labour list", whereby health workers are hired to occupy and assume positions not intended for them, e.g. nurses are hired to function as sanitary inspectors and therefore receive lower salaries, and "job order", whereby LGUs hire several casual/contractual health workers who serve until the end of the term of the politician or party that hired them.

The HRH situation described in 2005 still persists across regions in the country. Primary data on HRH at the local level were obtained from 2007 to 2010 while preparing Provincial Rationalization Plans for a Health Delivery System Based on Health Needs. The HRH component of the respective Provincial Rationalization Plans of the following provinces was studied:

1. Agusan del Sur
2. ARMM
3. Batanes
4. Batangas
5. Benguet
6. Biliran
7. Capiz
8. Cavite
9. Eastern Samar
10. Ifugao
11. Ilocos Norte
12. Isabela
13. Laguna
14. La Union
15. Marinduque
16. Misamis Occidental
17. Mountain Province
18. Negros Oriental
19. North Cotabato
20. Nueva Vizcaya
22. Oriental Mindoro
23. Palawan
24. Pangasinan
25. Quezon
26. Quirino
27. Rizal
28. Romblon
29. Sarangani
30. Southern Leyte
31. South Cotabato

Findings from the 31 provinces revealed that aside from the continuing existence of the three burning HRH issues mentioned in the HRHMPl 2005–2030, the following concerns on recruitment, deployment, management and development of HRH in the local government health care facilities were also cited:

- *Existing regular positions no longer fit the growing needs* of provincial, district and municipal/city hospitals and RHUs. Population growth in these provinces has imposed undue pressure on government hospitals in terms of additional staffing requirements, particularly in medical positions at the Municipal Health Offices and RHUs, as well as specialist positions in referral hospitals. However, most existing regular positions are filled and creating new or additional positions is a tedious and protracted process. In addition, the Department of Budget and Management has imposed a 25% ceiling on personnel salaries, making it is imperative for local executives to adopt personnel actions such as: (1) freezing the filling of vacant regular positions except for nursing and medical services; (2) implementing the "collapse and rebuild" strategy to create the necessary positions; (3) permanently

transferring re-assigned personnel including their positions to the recipient health care facility by virtue of a Sangguniang Panlalawigan legislation; (4) reviewing actual duties and responsibilities of health care personnel for an equitable workload distribution; and (5) allowing multi-tasking strategies based on employees' capability. This is one of the main reasons why hospitals have to hire employees outside the regular positions in order to augment its present workforce.

- *Political meddling and intervention in hiring of HRH personnel* in almost all government health care facilities in the province has caused an imbalance in the organizational structure of the hospitals. There is a profusion of support staff and contractual personnel (utility workers, clerks, janitors, etc.) in the local health facilities, while medical and health-related positions remain unfilled or are very much wanting of additional hands. In some instances, where there are vacant regular positions, an applicant will be appointed to the position even if it is not the right fit for him/her. In one case, a licensed pharmacist was given the position of a sanitation inspector because the pharmacy needed to fill three shifts, but there was no regular item for another pharmacist; similarly, a physical therapist was given the position of a utility worker because the hospital was opening up a rehabilitation center, but no such position was available. There are numerous other examples of health staff being appointed to vacant regular positions even if the duties they perform do not match their job description, e.g. a medical technologist given the position of a social welfare aide or a radiology technologist given a laboratory aide position.
- *The lack or absence of continuing education programme and skills training* to upgrade the competencies of doctors, nurses and other health personnel is related to the different priorities of the Local Chief Executive and/or Local Health Board. While the Department of Health offers scholarship programmes, the information is not always disseminated to local health workers. In some instances, interested applicants are not allowed to go on extended educational leave. There is also no mechanism to address the need for re-tooling of health personnel for new assignments or expanded tasks. However, there are instances when capability-building programmes are met with resistance by those who will be sent for training due to negative experience and attitude.
- *Inadequate support mechanisms* are offered by the provincial Human Resources Management Office (HRMO), especially for plans and programmes that will benefit health workers. With the growing concerns of health workers across regions, there is an urgent need for the creation of a separate functional human resources management development (HRMD) unit that will work with HRMO in carrying out HRMD programmes and initiatives in the province. Since the health services sector is labour intensive, the Administrative Officer and/or Provincial HRMO Officer who is tasked to act on HRM matters is overburdened with people's concerns and issues (e.g. installation and consistent implementation of HRMD systems, standardized implementation of Magna Carta benefits for health workers, recruitment of doctors and nurses, retention of skilled staff, and staff development). Establishing a dedicated unit for HRH management and development would be the first step in the long process of putting in place the right systems and policies that would help alleviate the plight of health workers in the province.

Health workers in the provinces do not see clear career opportunities, but they are hopeful that the *Provincial Rationalization Plan for Health Service Delivery System Based on Health Needs* will be implemented and funded so that their concerns (e.g. lack of career path and mobility, inequitable working conditions) can be tackled. At the same time, implementing the HRH component of the provincial rationalization plan will guarantee that the health concerns of constituents are properly attended to by HRH who are highly motivated.

5.2 HRH gaps at the local level

The same rationalization plans were analysed for HRH gaps in health care facilities of the provinces—provincial/district/municipal/community/city hospitals and RHUs. Out of the 31 provinces with rationalization plans prepared, only 13 or about 42% of provinces with validated HRH inventory were included in the analysis for HRH gaps. Nevertheless, the information obtained could be considered as indicative of the HRH requirements at the local level.

Guided by staffing standards set by the Department of Health for hospitals (Department of Health, 2008b) and the widely accepted population ratio for RHU staff complement, the personnel requirement for each facility in the province was determined (Annex J – Department of Health NCHFD staffing standards).

Table 10. HRH requirements at local-level health care facilities

Health occupational category	Number of positions required based on bed capacity or population	Number of regular positions	Gaps in the number of required positions
Doctor	978	532	446
Nurse	1738	801	937
Nursing attendant	696	424	272
Midwife	746	556	190
Dentist	132	95	37
Dental aide	70	48	22
Medical technologist	246	136	110
Medical laboratory technologist	45	13	32
Laboratory aide	42	28	14
Pharmacist	140	77	63
Nutritionist	72	56	16
Sanitary inspector	166	115	51
Radiologic technologist	106	48	58
Bacteriologist	2	–	2
Total	**5179**	**2929**	**2250**

Source: Department of Health, 2007–2010.

Table 10 indicates that 5179 health workers are needed to meet personnel requirements in the 13 provinces. Fifty-seven per cent of the positions have been filled with incumbents or regular position holders. Of the remaining 43%, about 6% are unfilled positions (e.g. doctors, medical technologist), but the rest of the staffing gaps have no regular positions and would necessitate the creation and funding of new positions.

5.3 Rural Health Team Placement Program (RHTPP)

The Department of Health has taken the lead in responding to the health service delivery needs of unserved/underserved municipalities in the country by initiating the Rural Health Team Placement Program (RHTPP). The programme was adapted by the Department of Health to address a disjointed health care delivery system as a consequence of the 1991 devolution, wherein the responsibility of delivering health care services was moved from the national government to LGUs. The RHTPP provides a solution to the inequitable distribution of health care professionals by implementing measures that will augment the health workers among the most vulnerable groups in the Philippines, especially in rural, unserved and underserved, poor communities across regions.

The programme is executed by the Department of Health in partnership with the Department of Social Welfare and Development (DSWD), which is responsible for synchronizing the deployment of nurses for the health component of its Pantawid Pamilya Pilipino Program (4Ps) *(Across Filipino Family Program)*, and LGUs, which manage teams of volunteer community health workers who provide local families with basic and comprehensive maternal, newborn, child, health and nutrition packages under the guidance of nurses. Other stakeholders include public and private academic institutions, which prepare competent community-oriented health workers to address the growing health care needs of the country; professional organizations, which monitor and follow up health workers assigned in communities; and funding organizations and development partners that support the programme financially and technically.

The RHTPP team is composed of a doctor, nurse, dentist, medical technologist, pharmacist, nutritionist-dietician and midwives. The programme's goal is to increase the employability of team members by making available learning and development opportunities, and at the same time, fostering independence in the

Table 11. Deployment of HRH through RHTPP, 2007–2010

Health cadre	2007	2008	2009	2010
Doctors to the Barrios	58	76	72	108
▪ Deployed to provinces or municipalities (RHUs)	114	106	107	73
▪ Deployed to Department of Health-retained and LGU hospitals	–	24*	–	17
Midwives	–	24*	–	48
Dentists	–	–	–	47
Medical technologists	–	–	–	47
Nutritionists-dieticians	12	10	19	18
Total	**172**	**206**	**179**	**340**

Source: Department of Health, HHRDB, 2011.
* Appointed for two years (2008–2009).

community's health care delivery system through the provision of quality health care professionals. Deployment of doctors, nurses and midwives to the 16 regions in the Philippines is made possible through the following programmes and projects: Doctors to the Barrios (DTTB), Medical Pool Placement and Utilization Program (MPPUP), Registered Nurses for Health Enhancement and Local Service (RNheals) Project, and Rural Health Midwife Placement Program (RHMPP).

The RHTPP is a scholarship-to-deployment scheme adapted by the Department of Health in order to ensure the steady supply and retention of health workers. The scholarship programmes for doctors and midwives are implemented through the collaborative partnership of the Department of Health with academic institutions, sponsoring agencies, and other government agencies such as DSWD and LGUs. In return for the scholarship grant, graduates of the programmes are deployed to predetermined municipalities based on their human resource needs. To deliver effective health services during the course of their tenure, health workers under RHTPP are afforded with continuing professional education to enhance individual and career development.

The most advanced programme provided for doctors deployed in difficult areas is a Masters in Public Management in Health Systems and Development (MPM-HSD). This degree course is composed of a series of independent unit-earning short courses. Each short course is individually crafted as a strategic component of the MPM-HSD to equip Philippine health care providers at different levels (policy-makers, managers and implementers) with the capability to implement health sector reform. This phased provision will allow recipients of the course to acquire higher education while rendering continuous service in their areas (*Philippine Country Report*, October 2011).

Table 11 shows the deployment of health workers from 2007 to 2010 through programmes and projects of the RHTPP.

Since 2007, the Department of Health has offered the following scholarship programmes: Midwifery Scholarship Program of the Philippines, Pinoy MD

Table 12. Scholarships for HRH in the Philippines, 2007–2010

No. of scholars	2008	2009	2010	2011	2012
Post-graduate degree	11	10	40	47	57
Bachelor's degree	24	36	25	37	0*
Midwifery Scholarship Program of the Philippines	16	16	115	144	238
Pinoy MD	234	335	422	405	338**
Total	**285**	**397**	**602**	**633**	**576**

Source: CHED, 2011.
* Data given for academic year 2011–2012 only.
** As of December 2012, there are 268 remaining scholars because there were 69 graduates and 1 dropout for academic year 2011–2012.

Scholarship for those desiring to pursue a degree in medicine, and scholarships for health workers wanting to pursue a bachelor or post-graduate degree. The increasing number of scholars will eventually translate into an increase in the pool of eligible HRH for high positions and potential careers in the Department of Health and LGU health facilities in the country. Table 12 presents a list of beneficiaries under these scholarship programmes.

More recent data manifest the relentless effort of the Department of Health to pursue the Aquino Health Agenda (AHA) of Universal Health Care (UHA). As of April 2012, Batches II and III of RNheals nurses and rural health midwives have been deployed. Specifically, 21 500 nurses and 3944 midwives have been deployed, with 10 206 assigned to 1411 conditional cash transfer areas. Batch IV of RNheals, to be deployed in 2013, is expected to comprise 22 500 nurses and 4379 midwives (Annex F – Deployment of RNheals batches II–IV).

Employment of "return service midwives" under the RHMPP aims to augment health staff to selected government units that have not performed well in terms of facility-based deliveries, fully immunized child and contraceptive prevalence rates. A total of 171 RHMPP midwives have been deployed to rural areas in 2012, and for budget year 2013, a total of 175 return service midwives are being proposed for continuing education.

As of August 2012, the MPPUP has deployed 162 physicians to 16 regions. Of this total figure, 107 are part-time Medical Specialists II, 7 are full-time Medical Specialists II and 49 are Medical Officers III. The physicians are assigned to Department of Health-retained hospitals and LGU provincial and district hospitals. Proposed for calendar year 2013 are 206 MPPUP physicians consisting of 136 part-time Medical Specialists II, 10 full-time Medical Specialists II and 60 Medical Officers III (Annex G – Currently deployed MPPUP per region).

The DTTB programme deploys competent and community-oriented doctors in depressed, marginalized and underserved areas in the country. Of the 763 DTTB doctors in 2012, 106 are deployed in 16 regions and 54 are assigned to municipalities without doctors (Annex H – DTTB distribution; Annex I – Doctorless municipalities).

6. Financing HRH

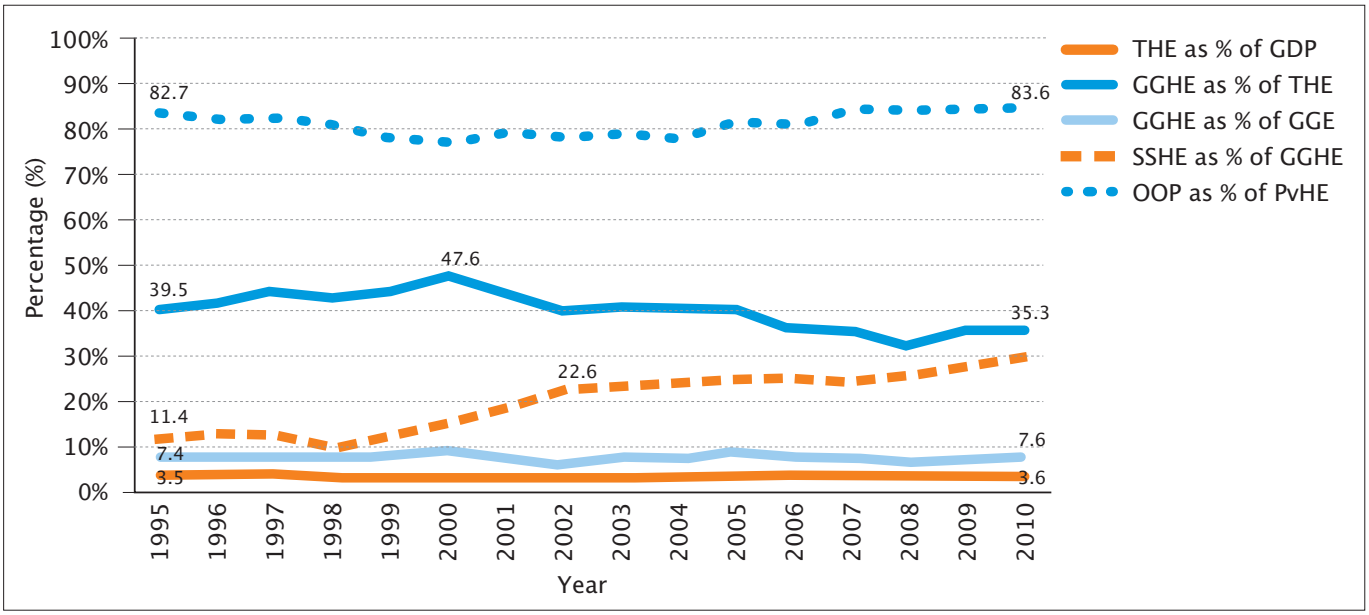
Yearly budgeting for health follows the Health Sector Expenditure Framework that was developed by the Department of Health in collaboration with the Department of Budget and Management. The framework determines the amount of resources that will be required in the medium term by health programmes and facilities. The Department of Health also implements a performance-based budget allocation scheme for health care facilities and coordinates health spending by LGUs through the Province-wide Investment Plan for Health (PIPH).

An increase from 6% in 2002 to 7.2% in 2009 in health expenditure has been traced to central government spending. However, it has been observed that LGU expenditure on health has declined. Since many municipalities and provinces have experienced financial shortfalls, health funds have been diverted to other priorities. In addition, the Philippine Health Insurance Corporation (PHIC) has hardly increased its share of health expenditure since its establishment in 1995. Government health expenditure is financed from general revenues and social insurance contributions. However, health services are principally financed directly by households through out-of-pocket payments that account for approximately 84% of all private expenditure on health (Figure 7).

The General Appropriations Act of 2011 approved a total budget of 31 828 616 000 Philippine pesos for the Department of Health (Department of Budget and Management, 2011). Of this amount, 3.5 billion pesos were allotted to the National Health Insurance Program for Indigents and Workers of the Informal Sector. Of the remaining budget, other allotments included 7 830 060 000 pesos or 25% for personal services, 15 660 353 000 pesos or 49% for maintenance and other operating expenses, and 8 937 031 000 pesos or 26% for capital outlay.

Income retention is allowed by law—for special hospitals, medical centres, institutes for disease prevention and control, including drug abuse treatment and rehabilitation centres and facilities,

Figure 7. Health expenditure in the Philippines, 1995–2010



Source: Global Health Observatory, WHO (2012).
GGE: general government expenditure; GGHE: general government health expenditure; OOP: out-of-pocket expenditure; PvHE: private health expenditure; SSHE: Social Security health expenditure: THE: total health expenditure.

and other Department of Health hospitals—to augment their maintenance and other operating expenses and capital outlays, including equipment and infrastructure projects to improve the delivery of health services. The law specifies, "at least 25% of the said income shall be used to purchase and upgrade hospital equipment used directly in the delivery of health services." However, the law further stipulates, "no amount of said income shall be used for the payment of salaries and other allowances."

Remuneration of health workers

Health policy-makers and planners have long recognized that one of the *push* factors of migration is usually rooted in the low salaries and compensation given to health care workers in the Philippines. Comparisons of wages in other countries and the Philippines show a wide discrepancy in compensation packages. Slight differences are also seen in the salaries of those working in the private sector compared with their counterparts in government. However, available data from the private sector require further scrutiny since they are not readily divulged and documented, particularly professional fees of doctor specialists. Table 13 shows the wide disparity in the remuneration package of health workers in the Philippines when compared to other countries.

Table 13. Comparative median monthly compensation for private sector health professionals in foreign countries and the Philippines, 2006

Categories of health professionals	Foreign countries (In Philippine pesos)	Philippines (private sector) (In Philippine pesos)
Medical doctors	138 549 (17 countries)	18 134
Physiotherapists and occupational therapists	61 558 (26 countries)	No data
Dentists	45 029 (3 countries)	7035
Nurses	38 126 (36 countries) 17 196 (10 countries)	8944
Pharmacists	33 320 (5 countries)	No data
Midwives	19 652 (6 countries)	7958

Source: Department of Labor and Employment, 2006.

Table 14. Income levels by professional category, 2012

Professional category	Salary grade	Monthly basic salary (Philippine pesos)
Health professionals		
Medical Officer V	25	53 730.00
Medical Specialist IV	25	53 730.00
Medical Specialist III	24	49 750.00
Medical Specialist II	23	46 064.00
Medical Officer IV	20	36 567.00
Medical Officer III	18	31 351.00
Health Physicist III	22	42 652.00
Nurse VII	24	49 750.00
Nurse VI	22	42 652.00
Nurse V	20	36 567.00
Nurse IV	19	33 859.00
Nurse III	17	29 028.00
Nurse II	15	24 887.00
Nursing Attendant II	6	12 921.00
Nursing Attendant I	4	11 181.00
Midwife II	15	24 887.00
Medical Technologist IV	20	36 567.00
Medical Technologist III	18	31 351.00
Medical Technologist II	15	24 887.00
Chemist II	15	24 887.00
Chemist I	11	18 549.00
Bacteriologist II	15	24 887.00
Bacteriologist I	11	18 549.00
Radiologic Technologist V	20	36 567.00
Radiologic Technologist IV	18	31 351.00
Radiologic Technologist III	15	24 887.00
Radiologic Technologist II	13	21 436.00
Radiologic Technologist I	11	18 549.00
Dentist IV	23	46 064.00
Dentist III	20	36 567.00
Dentist II	17	29 028.00
Dental Aide	4	11 181.00
Nutritionist-Deitician IV	20	36 567.00
Nutritionist-Dietician III	18	31 351.00
Nutritionist-Dietitcian II	15	24 887.00
Nutritionist-Dietician I	11	18 549.00
Pharmacist V	22	42 652.00
Pharmacist IV	20	36 567.00
Pharmacist III	18	31 351.00
Pharmacist II	15	24 887.00
Pharmacist I	11	18 549.00
Physical Therapist III	18	31 351.00
Physical Therapist II	15	24 887.00
Physical Therapist I	11	18 549.00
Occupational Therapist II	15	24 887.00
Occupational Therapist I	11	18 549.00
Speech Therapist II	14	23 044.00
Respiratory Therapist III	18	31 351.00
Respiratory Therapist II	14	23 044.00
Respiratory Therapist I	10	17 255.00
Other professionals (Health support personnel)		
Administrative Officer V	18	31 351.00
Administrative Officer IV	15	24 887.00
Administrative Officer II	11	18 549.00
Administrative Assistant II	8	14 931.00
Engineering		
Engineer III	19	33 859.00
Engineer II	16	26 878.00
Accounting		
Administrative Officer V	18	31 351.00
Administrative Officer IV	15	24 887.00
Administrative Assistant III	9	16 051.00
Administrative Assistant II	8	14 931.00

Source: Department of Health, 2012.

Table 15. Other compensation benefits

Compensation benefits of health workers		Amount in Philippine pesos
Personnel Economic Relief Allowance (PERA)		2000/month
Subsistence allowance		30/working day
Laundry allowance		130/month
Hazard pay: Salary grade 1–19 Salary grade 20–up		25% of basic salary/month 4989.75/month
Clothing allowance		5000/year
Bonus (13th month pay)		Basic salary
Cash gift		5000
Mandatory benefits	**Employer share**	**Employee share**
Philippine Health Insurance Corporation (PHIC)	375	375
Pag-IBIG Fund (or Home Development Mutual Fund)	100	100
Government Service Insurance System (GSIS)	Basic x 9%	Basic x 12%
Employee Compensation on Insurance Premium (ECIP)		100/month

Source: Department of Health, 2012.

Recognizing the plight of government workers, particularly those in the health sector, the Senate and the House of Representatives passed Joint Resolution No. 4, which was approved and signed by President Aquino on 17 June 2009. Entitled *Joint Resolution Authorizing the President of the Philippines to Modify the Compensation and Position Classification of Civilian Personnel and the Base Pay of Military and Uniformed Personnel in the Government and for Other Purposes*, the move was a shot in the arm for all employees of the government as their prolonged clamour for upgrades in compensation and benefits was finally heard. Finally, the compensation package of health workers in the government is now comparable to that of their private sector counterparts, if not even better for most positions.

In Executive Order 76, the President ordered the implementation of the fourth tranche monthly salary schedule for civilian employees, effective 1 June 2012 (Office of the President, 2012). The fourth tranche implementation for LGU personnel was determined by the Sanggunian (local council) based on the LGU income class and financial capability. The new salary scale of public health workers recognizes the following basic principles:

- payment of just and equitable wages;
- comparability of compensation of government personnel with private counterparts;
- standardization and rationalization of government wages to promote social justice, integrity, productivity and excellence in the civil service;
- adoption of performance-based incentives to reward exemplary service;
- review of the system every three years to consider trends and skills requirements, demands for certain expertise, purchasing power, etc.;
- consideration of economic realities and creation of professionalism, exemplary performance, and commitment to service in the basic pay schedule of military and uniformed personnel; and
- compensation of government personnel to be kept fair and reasonable in recognition of fiscal realities.

Table 14 shows the new entry-level salary grades for priority HRH positions in government and the corresponding total monthly salary, consisting of basic pay and other compensation benefits as detailed in the succeeding tables.

Other compensation benefits of health workers (Table 15), which are added to their basic salary, are mandatory obligations consisting of employee share in insurance coverage and other allowances that are provided for in the Magna Carta of Public Health Workers (Republic Act No. 7305).

7. Governance of HRH

7.1 HRH policies and plans

The HRHMP 2005–2030 noted that, in general, there seems to be sufficient legal issuances and policies to regulate the professional practice of medical and health-related professions. However, since most of these laws have remained unrevised for 30–55 years, except for the nursing law that was amended in 2002, there is a need to re-visit the different professional legislations and adjust them to current demands and trends not only in the Philippines but also globally.

The HRHMP concluded that the *primary problem in all the existing legislation was the absence of an overarching policy and framework to guide the planning and development of HRH.* The following legislation pertains to public health workers and to specific health care professionals, including paramedical and traditional health care providers:

- Republic Act No. 7305: The Magna Carta of Public Health Workers
- Republic Act No. 7883: The Barangay Health Workers' Benefits and Incentives Act of 1995 Implementing Rules and Regulations
- Republic Act No. 8423: An Act Creating the Philippine Institute of Traditional and Alternative Health Care (PITAHC) to Accelerate the Development of Traditional and Alternative Health Care in the Philippines, Providing for a Traditional and Alternative Health Care Development Fund and for Others Purposes
- Department of Health Administrative Order No. 172 s. 2001: Policies and Guidelines on the Private Practice of Medical and Paramedical Professionals in Government Health Facilities
- Department of Health Administrative Order No. 22-B s. 1997: Operational Guidelines in the Implementation of the Doctors to the Barrios (DTTB) Program

Professional regulation policies:

- Medicine: Republic Act No. 2382 (1959)
- Dentistry: Republic Act No. 4419 (1965)
- Physical and Occupational Therapy: Republic Act No. 5680 (1969)
- Pharmacy: Republic Act No. 592 (1969)
- Optometry: Republic Act No. 8050 (1995)
- Nursing: Republic Act No. 9173 (2002)
- Medical Technology: Republic Act No. 5527 (1969)
- Radiology: Republic Act No. 7431 (1992)
- Sanitary Engineer: Republic Act No. 1364 (1955)
- Midwifery: Republic Act No. 7392 (1992)
- Nutrition and Dietetics: Presidential Decree No. 1286 (1977)
- Code of Ethics for the various professions

Upon analysis of these legislations, the HRHMP observed that they had conflicting objectives that did not seem to refer to the attainment of any of the HRH development goals. The prevailing conditions in 2005, when the HRHMP was developed, pointed to basic HRH problems stemming from: weaknesses in HRH production; limited capacity for rural employment where HRH need is greatest; ineffective retention schemes; and uncoordinated interventions for capability development. On the other hand, opportunities for foreign employment have continually been attractive to Filipino human resources for health.

7.2 HRH network

All of these inconsistencies, which remain current today, pose major constraints to the achievement of the AHA-UHC. The HRHMP recommended a coordinated approach among government agencies and relevant stakeholders to address these limitations. An integrated approach to HRH planning is required to unify policies and standards on production and deployment of various health professions, strengthen health workforce regulatory functions, and manage HRH in a way that is responsive to the Philippine health system needs and design.

Realizing this imperative, the Department of Health, through HHRDB, spearheaded the creation of the HRH Network in October 2006. The HRH Network is composed of multisectoral agencies (2 accredited professional organizations, 1 academic institution, 15 government agencies and 1 labour federation) that have mandates relevant to HRH management and development. The HRH Network integrates agency efforts to harmonize HRH policy directions on HRH production, retention, migration and reintegration (Department of Health and GTZ, 2007).

More specifically, the HRH Network aims to harmonize the mandates, policies and programme activities of different agencies, accredited professional organizations, academic institutions and nongovernmental organizations in the production,

welfare and development of HRH to deliver quality health care for Filipinos by ensuring that:

- HRH education and training is linked to health system needs;
- HRH are well-motivated and effectively contribute to the health system;
- principles of ethical recruitment of international health personnel are practised through managed migration;
- national and international partners are engaged to contribute to the management and development of HRH; and
- HRH planning as well as policy monitoring and development are coordinated across different agencies.

The membership of the HRH Network consists of the following government agencies, nongovernmental organizations, academic institutions and professional organizations that are willing to take part in the resolution of HRH challenges in the country.

Member government agencies:

- Department of Health as the lead agency of the HRH Network
- Department of Foreign Affairs (DFA)
- Department of Interior and Local Government (DILG)
- Department of Labor and Employment (DOLE)
- Department of Budget and Management (DBM)
- Department of Finance (DOF)
- National Economic and Development Authority (NEDA)
- Philippine Overseas Employment Administration (POEA)
- Overseas Workers Welfare Administration (OWWA)
- Commission on Filipinos Overseas (CFO)
- Bureau of Immigration (BI)
- Technical Education and Skills Development Authority (TESDA)
- Commission on Higher Education (CHED)
- Professional Regulation Commission (PRC)
- Civil Service Commission (CSC)

Member professional organizations:

- Association of Deans of Philippine Colleges of Nursing (ADPCN)
- Association of Philippine Medical Colleges (APMC)

Member academic institution:

- Institute of Health Policy and Development Studies, National Institutes of Health, University of the Philippines, Manila (IHPDS-UP NIH)

Member nongovernmental labour organization:

- Public Services Labor Independent Confederation (PSLINK)

The HRH Network is structured into several committees: Oversight Committee, Steering Committee, Technical Working Committees (TWCs), and a Secretariat that is served by the Department of Health. Given the institutional nature of the different member agencies, their participation in the HRH Network is contextualized according to the following mandates: integrated database; HRH education and training; deployment and retention; and management of migrant workers (exit, re-entry and re-integration).

The synchronization of policies and programme activities of HRH Network member organizations is achieved through the workings of three TWCs: (1) HRH Entry, which is responsible for matters concerning the planning, education and recruitment of HRH; (2) HRH Workforce, which addresses issues of supervision, compensation, systems support and lifelong learning; and (3) HRH Exit and Re-entry, which covers career choice, health and safety, migration and retirement, and reintegration of HRH into the Philippine health care system. The working committee members are directors, division chiefs or holders of equivalent positions of the concerned bureau/agency/organization. A representative of the HHRDB serves as the secretariat for each working committee.

Since the memorandum of understanding was signed by member agencies in 2006, the HRH Network has efficiently undertaken policy development, adoption and implementation geared towards migration management, salary standardization, protection and welfare of workers, competency-based licensure, and reintegration from foreign employment. To secure the gains made in the last five years, the institutionalization of the HRH Network is being proposed as a bill in Congress (Department of Health, 2008a). The continued existence of the HRH Network will help ensure a concerted process of managing HRH to achieve the country's health sector goals.

7.3 HRH policy development, planning and management

The passage of the Local Government Code of 1991 transferred the responsibility for health service delivery from the Department of Health to about 1600 LGUs, thus significantly diminishing its power. The Department of Health's involvement in the

country's health care system has been restricted to specialty hospitals and regional and medical centres. The Department of Health's presence in the regions is represented by 16 centres for health development. The provincial governments now oversee the provincial and district hospitals; the municipal governments manage RHUs and BHS; and city governments manage city health centres and BHS.

Under the devolved setting, LGUs have become the core players in the health delivery system. As such, they are obliged to formulate and enforce local policies and ordinances on health, nutrition, sanitation and other health-related matters in accordance with national policies and standards. They must also allocate funds to health programmes and projects of the LGU, including salaries of health workers. The Local Chief Executive plays a major role in the management of HRH in LGU hospitals and health facilities. Through the HRMO or the Administrative Office of the province, the Local Chief Executive oversees the management of all regular and contractual personnel in each hospital (provincial, district, municipal/city) and makes sure each BHS is staffed by a midwife and each RHU or city health centre is staffed by a doctor, a nurse and midwives (1:5000 population).

One ill effect of devolution has been the deterioration in health care delivery at the local level. The Department of Health took steps to address the numerous challenges of devolution by initiating the Health Sector Reform Agenda in 1999 (Department of Health, 2007). This was followed by *FOUR*mula *ONE* for Health in 2005, as the implementing strategy of the Health Sector Reform Agenda, and now Universal Health Care under the Aquino Health Agenda. The AHA-UHC focuses on the poor so that no one is left behind in the implementation of health reforms. The Department of Health, as the primary driver in achieving UHC, has identified three strategic thrusts, namely: (1) financial risk protection through expansion of the National Health Insurance Program (NHIP), specifically enrolment and benefit delivery; (2) improved access to quality hospitals and health care facilities by upgrading and expanding capacity and services; and (3) attainment of MDGs through focused public health programmes.

To reduce fragmentation in the health delivery system, the Department of Health initiated the development of a Province-wide Investment Plan for Health (PIPH) in 2006. The PIPH is intended to harmonize the rationalization of the local health system and to complement support from the national Government and development partners. The Department of Health worked with each LGU in the formulation of their provincial health plans in the form of a *Rationalization Plan for Health Delivery System Based on Health Needs.* The implementation of PIPH is accompanied by a service-level agreement defining the benchmarks for LGU performance that will trigger the release of corresponding grants and variable tranches from the Department of Health. This arrangement is envisaged to bring about improvements in the country's health delivery system as both national and local governments harmonize their approach and implementing strategies. The support of development partners is also synchronized with fund releases from the national Government.

The public health mandate of the Department of Health involves setting health standards, policies and guidelines to support implementation of health service at the local level. For human resources for health, this order is carried out through HHRDB. The Bureau develops policies that are evidence-based and responsive to the issues and concerns of human resources for health, and are aligned with the thrust of the Department of Health. Policy formulation includes the crafting and revision of Executive Orders, Administrative Orders and Department Orders developed by the Bureau. It starts with the identification of needed HRH policy, and ends with the endorsement of policy to the Health Policy Development and Planning Bureau for approval, or presentation to the Department of Health's Executive Committee (Office of the Secretary of the Department of Health, 2009a and 2009b).

The development of HRH policies by HRHDB is further guided by the 6-year National Objectives for Health and the 25-year HRH Master Plan. As one of the core agencies of the HRH Network and serving as secretariat to all TWCs, HHRDB is able to align the development and implementation of HRH policies with the mandates of other government agencies as well as professional associations, nongovernmental entities and relevant international organizations. In policy implementation, HHRDB endeavours to ensure adequate supply and equitable distribution of HRH in the country. Its major role is to institutionalize the human resource systems in collaboration with other sectors to guarantee adequate, competent, committed, effective and globally competitive HRH. While HHRDB is the HRH lead at the national level, coordination of HRH at the local level is accomplished through the human resource units of the regional centres for health development.

Table 16. Role of various agencies in HRH development

Institution	Role in HRH development
Department of Health - Health Human Resource Development Bureau (HHRDB)	▪ Focuses on plans, policies, programmes, standards related to HRH production, deployment, utilization and development ▪ Conducts HRH training, research and technical assistance
Philippine Health Insurance Corporation (PHIC)	▪ Officially recognizes health professionals as health providers of PHIC
Professional Regulation Commission (PRC)	▪ Promotes honest and credible licensure examinations of health professionals ▪ Provides continuing education and development ▪ Ensures effective regulation of professional practice
Commission on Higher Education (CHED)	▪ Promotes quality health science education and health science curriculum ▪ Provides access to education for all and protects academic freedom
Department of Labor and Employment (DOLE)	▪ Promotes gainful employment opportunities that will optimize the development and utilization of the country's workforce ▪ Advances workers' welfare and maintains industrial peace and stable employment relations
Philippine Overseas Employment Administration (POEA)	▪ Guarantees migrant workers' rights by utilizing a country team approach to synergize services to Filipinos overseas ▪ Provides selective services for the deployment, repatriation and reintegration of workers
Technical Education and Skills Development Authority (TESDA)	▪ Integrates, coordinates, funds and monitors skills development programmes ▪ Operates an accreditation system for institutions involved in the development of mid-level human resources
National Economic and Development Authority (NEDA)	▪ Formulates continuing, coordinated and fully integrated social and economic policies, plans and programmes, including the health sector
Department of Budget and Management (DBM)	▪ Promotes sound, efficient and effective management and utilization of government resources (i.e. technology, people, infrastructure and finances) as instruments in the achievement of national socioeconomic and political development goals
Department of Foreign Affairs (DFA)	▪ Protects the rights and welfare of Filipinos overseas and mobilizes them as partners in national development
Civil Service Commission (CSC)	▪ Promotes recruitment, development, maintenance and retention of competent professionals and highly motivated government workforce truly responsive to the needs of the public
Department of Interior and Local Government (DILG)	▪ Enhances the capabilities of the LGUs for self-governance, and implement plans and programmes on local autonomy
LGU Leagues of Governors and Mayors	▪ Collaborate with national and other local government agencies in attaining efficient and effective inter-governmental relations to provide development programmes that will enrich and upgrade the capabilities of LGUs, including health workers in various health facilities
Accredited professional organizations	▪ Provide for training and development of members ▪ Ensure protection of health professionals
Public and private health facilities	▪ Involved in the employment, deployment, growth and development of health professionals working in their health facilities

Table 17. PRC-licensed health professionals (cumulative)

Health occupational category	2005	2006	2007	2008
Doctor	88 552	91 144	94 074	96 639
Nurse	351 229	385 512	442 084	492 666
Physical therapist	18 738	19 737	20 533	21 974
Occupational therapist	2216	2337	2414	2578

Source: PRC, 2009.

Table 18. Projected HRH requirements for various health professional groups

Health occupational category	Projected HRH requirements					
	2005	2010	2015	2020	2025	2030
Doctors	17 797	19 402	21 158	23 080	25 185	27 491
Nurses	170 423	185 788	202 603	221 010	241 166	263 244
Dentists	8629	15 954	9871	10 761	11 735	12 802
Medical technologists	6386	6393	6633	7033	7553	7779
Physical therapists	7036	7644	8346	9117	9964	10 893
Occupational therapists	5285	5733	6250	6820	7443	8126
Pharmacists	21 572	23 518	25 646	27 976	30 527	33 322
Midwives	17 338	18 897	20 603	22 469	24 513	26 751

Source: HRHMP, 2005.

7.4 HRH information system

A bill pending in Congress, which calls for the institutionalization of the HRH Network, recognizes the urgent need to develop and maintain an integrated HRH database. Section 12 of the bill specifies: "the HRH Network Philippines shall develop and maintain an integrated database containing relevant HRH information to be used for evidence-based planning and policy making. As such, all abovementioned government agencies shall share the necessary information from their databases to the HRH Network Philippines integrated database, and update these data on a regular basis."

At present, the Department of Health has three stand-alone information systems for HRH[1], namely: (1) *Ejobs for Health*, which was installed in 2007 and is used by four agencies for posting job vacancies; (2) *Personnel Information System* (PIS), an internal system of the Department of Health that is linked to payroll; and (3) the *National Database on Human Resources for Health Information System (NDHRHIS)*, developed in 2009, which contains data on key health workers affiliated with private and public health facilities across regions.

The HRHMP noted that obtaining HRH data is very difficult since there is no system in place to integrate all information regarding HRH. Furthermore, the health sector itself does not have a unified information system. HRH data are being sourced and generated in different formats and platforms and for various purposes by the following agencies:

- PRC has cumulative and disaggregated data on the supply of health professionals. While data on the socio-demographic characteristics of registered health professionals are being collected by the agency, they are cumulative and unfortunately do not provide a realistic picture of the supply. Table 17 provides the total number of health personnel by occupational category according to the PRC database; figures are four to five times higher than NDHRHIS data.
- CHED periodically comes up with a list of health science schools, enrollees, graduates and cost of health science education.
- The Department of Health has limited HRH data on local deployment and is confined to nine categories of health workers at the national level.
- POEA has data on international deployment disaggregated by age, sex, destination country, gender and year.
- The National Statistics Office has information on the distribution of selected government health workers based on the national survey.

1 Although FHSIS has data on HRH is not a dedicated HRH data set. It has data on mortality, morbidity, immunization and other public health data aside from some HRH information.

- LGUs have HRH databases that are still in book ledgers and various Excel formats. No functional information system is available to summarize the HRH information at the DILG level or at the level of the Leagues of Governors and Mayors.
- Private sector: HRH data are not being collected by health associations such as the Philippine Hospital Association. HRH data on private clinics and laboratories cannot be retrieved.

The lack of an integrated HRH information system limits the soundness of HRH projections and the establishment of reliable HRH standard ratios to estimate the HRH requirements in health facilities. The deficiency of actual data at the time required to accomplish tasks per health professional category has implications on the number of health staff required per facility. This may be one of the factors affecting the long-time issue of understaffing in hospitals (HRHMP, 2005).

7.5 Health workforce projections

The workforce projection model that was designed during the formulation of the HRHMP 2005–2030 was based on a WHO-commissioned Workforce Planning Tool developed by Dr Carol Gaston et al (Annex K – Prescribed parameters for workforce projection). The recommended workforce requirements for eight positions were derived using adjusted workforce projections with different assumptions that have been shown to eliminate surpluses or deficits.

Using the assumptions listed below, the projected HRH requirements for the period 2005–2030 (Table 18), were computed:

(1) Doctors – 10% increase in graduation rates for all years except in NCR where graduation patterns should be maintained at 2005 levels;
(2) Dentists – 10% attrition rates applied for all years;
(3) Nurses – graduation rates increased by 10% from 2006 to 2010, 15% from 2011 to 2019, and 5% thereafter except in NCR;
(4) Physical therapists – graduation rates increased by 5% for all years;
(5) Occupational therapists – graduation rates increased by 100% (2006–2010) and by 5% thereafter;
(6) Pharmacists – graduation rates increased by 5% for all years;
(7) Medical technologists – 10% attrition rates applied for all years;
(8) Midwives – 10% attrition rates and graduation rates increased by 10% from 2021 to 2030.

Although these projections were made in 2005, several conjectures can still be drawn from the figures obtained from utilizing the projection model. However, these may not lead to helpful conclusions since assumptions have changed over the last five years due to global forces and demands. For example, the closing of nursing positions in highly developed countries (e.g. England, Germany, Italy and the United States of America) beginning in 2008 was not anticipated in the assumptions.

Furthermore, the projection model has the following limitations that must be taken into consideration:

(1) The projection model requires data that:

   (a) are as complete as possible, e.g. number of HRH to be used in the "base year";
   (b) are acquired over a period of time (at least 3-year period), e.g. attrition rate, licensure pattern;
   (c) are generated from and/or provided by multiple sources; there is no single entity/ institution that can generate all required input;
   (d) can cover wide variation, e.g. cost to train (tuition in government vs. private schools), salary cost (salary/pay scale and number of persons per unit of the scale); and
   (e) have clear-cut basis for assumptions, e.g. preferred HRH-to-population ratio (what should be considered as input in determining ideal ratio).

(2) The projection model does not differentiate between and among subtypes of professionals, e.g. between specialist and generalist.

Given these limitations, the projection model will only serve its full usefulness once the unified database is completed and data therein verified and validated. Enhancements to the model may also be undertaken in due time to make distinctions among subtypes and to yield more evidence-based information that will be very useful input to HRH planning.

8. Concluding remarks

The Department of Health has been actively addressing HRH challenges through the implementation of the HRH strategic plan and by introducing innovative approaches to improve the distribution of health workers. While the implementation of the HRH strategic plan is being evaluated and the HRH strategic plan is planned to be updated, challenges with maldistribution of health workers persist.

On the one hand, increasing number of nurses through increased number of nursing schools has become an important challenge. The expectations for potential employment opportunities abroad stimulated a rapid increase in the number of nursing schools. However, this raised concerns with the quality of the education received, together with concerns regarding the low proportion of the graduates passing the entry-to-practice exam. Simultaneously, the limited employment opportunities are leading these nurses to unemployment or to employment of nurses in other sectors. On the other hand, the shortage of physicians continues indicating skill-mix imbalances.

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ANNEXES

ANNEX A. Health workforce regional distribution

Occupational category/ cadre	NCR Total population	Total HW	HW/ 1000 Pop	CAR Total population	Total HW	HW/ 1000 Pop	Region I Total population	Total HW	HW/ 1000 Pop
		NCR			CAR			Ilocos Region	
Doctor	11 547 959	4029	0.3489	1 148 314	1051	0.9153	4 546 789	2138	0.4702
Nurse		4315	0.3737		1350	1.1756		2331	0.5127
Midwife		786	0.0681		823	0.7167		1452	0.3193
Dentist		259	0.0224		74	0.0644		299	0.0658
Nutritionist-dietician		150	0.0130		49	0.0427		77	0.0169
Pharmacist		273	0.0236		98	0.0853		695	0.1529
Occupational therapist		20	0.0017		5	0.0044		2	0.0004
Medical technologist		1123	0.0972		234	0.2038		427	0.0939
Physical therapist		82	0.0071		23	0.0200		54	0.0119

Occupational category/ cadre	Region II Total population	Total HW	HW/ 1000 Pop	Region III Total population	Total HW	HW/ 1000 Pop	Region IVA Total population	Total HW	HW/ 1000 Pop
		Cagayan Valley			Central Luzon			CALABARZON	
Doctor	3 051 487	1051	0.3444	9 709 177	3553	0.3659	11 757 755	3251	0.2765
Nurse		1346	0.4411		3535	0.3640		3364	0.2861
Midwife		1045	0.3425		1821	0.1876		659	0.0560
Dentist		100	0.0328		183	0.0188		54	0.0046
Nutritionist-dietician		51	0.0167		119	0.0123		93	0.0079
Pharmacist		105	0.0344		229	0.0236		172	0.0146
Occupational therapist		4	0.0013		0	0		5	0.0004
Medical technologist		222	0.0728		851	0.0876		320	0.0272
Physical therapist		21	0.0069		37	0.0038		75	0.0064

Occupational category/cadre	Region IVB Total population	Total HW	HW/ 1000 Pop	Region V Total population	Total HW	HW/ 1000 Pop	Region VI Total population	Total HW	HW/ 1000 Pop
		Mimaropa			Bicol Region			Western Visayas	
Doctor	2 559 791	620	0.2422	5 106 160	1078	0.2111	6 843 643	1037	0.1515
Nurse		773	0.3020		1362	0.2667		1828	0.2671
Midwife		720	0.2813		1055	0.2066		656	0.0959
Dentist		106	0.0414		110	0.0215		99	0.0145
Nutritionist-dietician		44	0.0172		50	0.0098		59	0.0086
Pharmacist		243	0.0949		61	0.0119		117	0.0171
Occupational therapist		1	0.0004		3	0.0006		58	0.0085
Medical technologist		71	0.0277		204	0.0340		222	0.0324
Physical therapist		88	0.0344		12	0.0024		31	0.0045

Occupational category/cadre	Region VII Total population	Total HW	HW/ 1000 Pop	Region VIII Total population	Total HW	HW/ 1000 Pop	Region IX Total population	Total HW	HW/ 1000 Pop
		Central Visayas			Eastern Visayas			Zamboanga Peninsula	
Doctor	6 400 698	1262	0.1972	3 915 140	908	0.2319	3 230 094	567	0.1755
Nurse		2725	0.4257		1174	0.2998		1142	0.3536
Midwife		656	0.1025		845	0.2158		798	0.2471
Dentist		67	0.0105		122	0.0312		34	0.0105
Nutritionist-dietician		72	0.0112		35	0.0089		38	0.0118
Pharmacist		190	0.0297		124	0.0317		220	0.0681
Occupational therapist		2	0.0003		0	0		1	0.0003
Medical technologist		382	0.0597		233	0.0595		159	0.0492
Physical therapist		12	0.0019		12	0.0031		9	0.0028

Occupational category/cadre	Region X Total population	Total HW	HW/ 1000 Pop	Region XI Total population	Total HW	HW/ 1000 Pop	Region XII Total population	Total HW	HW/ 1000 Pop
		Northern Mindanao			Davao Region			SOCCSKSARGEN	
Doctor	3 952 437	1020	0.2581	4 159 469	1032	0.2481	3 830 500	1052	0.2746
Nurse		1873	0.474		888	0.2135		1694	0.4422
Midwife		1108	0.2803		496	0.1192		1055	0.2754
Dentist		102	0.0258		65	0.0156		73	0.0191
Nutritionist-dietician		47	0.0119		37	0.0089		60	0.0157
Pharmacist		142	0.0359		148	0.0356		308	0.0804
Occupational therapist		0	0		1	0.0002		1	0.0003
Medical technologist		220	0.0557		196	0.0471		251	0.0655
Physical therapist		15	0.0038		5	0.0012		20	0.0052

Occupational category/cadre	Region XIII Total population	Total HW	HW/ 1000 Pop	ARMM Total population	Total HW	HW/ 1000 Pop
		Caraga			ARMM	
Doctor	2 293 346	462	0.2015	4 120 795	62	0.0150
Nurse		937	0.4086		69	0.0167
Midwife		818	0.3567		68	0.0165
Dentist		72	0.0314		10	0.0024
Nutritionist-dietician		33	0.0144		5	0.0012
Pharmacist		71	0.0309		11	0.0027
Occupational therapist		0	0		0	0
Medical technologist		162	0.0706		20	0.0049
Physical therapist		6	0.0026		1	0.0002

ARMM, Autonomous Region in Muslim Mindanao; CAR, Cordillera Administrative Region; HW, health worker; NCR, National Capital Region; Pop, population.
Source: National Database on Human Resources for Health (NDHRHIS), Health Human Resource Development Bureau (HHRDB), Department of Health, 31 December 2011.

ANNEX B. Public vs. private sector distribution of health workers

Occupational category/cadre	Total	Public sector		Private sector	
Doctors	18 740	8246	0.44	10 307	0.55
Nurses	32 279	14 526	0.45	17 753	0.55
Midwives	14 951	12 110	0.81	2841	0.19
Dentists	1725	1328	0.77	379	0.23
Nutritionists	996	618	0.62	378	0.38
Pharmacists	1997	937	0.47	1058	0.53
Occupational therapists	111	71	0.64	40	0.36
Medical technologists	5077	2285	0.45	2792	0.55
Physical therapists	530	186	0.35	344	0.65
Radiology technologists	751	270	0.36	481	0.64
X-ray technologists	219	59	0.27	160	0.73

Source: NDHRHIS, HHRDB, Department of Health, 31 December 2011.

ANNEX C. Place of practice by public and private health providers – Summary by region

Region	Place of practice	Doctor	Nurse	Midwife	Dentist	Nutritionist–dietician	Pharmacist	Occupational therapist	Medical technologist	Physical therapist	Total
I - Ilocos Region	Within	2061	2329	1,452	299	77	693	2	426	54	7393
	Cross	77	2	0	0	0	2	0	1	0	82
II - Cagayan Valley	Within	1045	1346	1,045	100	51	105	4	221	21	3938
	Cross	6	0	0	0	0	0	0	1	0	7
III - Central Luzon	Within	3485	3533	1820	183	119	229	0	848	37	10 254
	Cross	68	2	1	0	0	0	0	3	0	74
IVA - CALABARZON	Within	3180	3364	659	54	93	172	5	320	75	7922
	Cross	71	0	0	0	0	0	0	0	0	71
IVB - MIMAROPA	Within	603	773	719	106	44	242	1	71	88	2647
	Cross	17	0	1	0	0	1	0	0	0	19
V - Bicol Region	Within	1074	1362	1055	110	50	61	3	204	12	3931
	Cross	4	0	0	0	0	0	0	0	0	4
VI - Western Visayas	Within	1035	1828	656	99	59	117	58	222	31	4104
	Cross	2	0	0	0	0	0	0	0	0	2
VII - Central Visayas	Within	1237	2724	655	67	72	189	2	381	12	5339
	Cross	25	1	1	0	0	1	0	1	0	29
VIII - Eastern Visayas	Within	903	1173	845	122	35	124	0	232	12	3446
	Cross	5	1	0	0	0	0	0	1	0	7
IX - Zamboanga Peninsula	Within	556	1142	798	34	38	220	1	159	9	2957
	Cross	11	0	0	0	0	0	0	0	0	11
X - Northern Mindanao	Within	1008	1869	1105	102	47	142	0	219	15	4507
	Cross	12	4	3	0	0	0	0	1	0	20
XI - Davao Region	Within	995	888	496	65	37	146	1	196	5	2829
	Cross	37	0	0	0	0	2	0	0	0	39
XII - SOCCSKSARGEN	Within	1028	1694	1055	73	60	308	1	251	20	4490
	Cross	24	0	0	0	0	0	0	0	0	24
XIII - Caraga	Within	457	937	818	72	33	71	0	162	6	2556
	Cross	5	0	0	0	0	0	0	0	0	5
NCR	Within	3856	4311	785	259	150	270	20	1120	82	10 853
	Cross	173	4	1	0	0	3	0	3	0	184
CAR	Within	1031	1350	823	74	49	98	5	234	23	3687
	Cross	21	0	0	0	0	0	0	0	0	21
ARMM	Within	60	69	68	10	5	11	0	20	1	244
	Cross	2	0	0	0	0	0	0	0	0	2
Total	**Within**	**23 613**	**30 692**	**14 854**	**1829**	**1019**	**3198**	**103**	**5286**	**503**	**81 097**
	Cross	**560**	**14**	**7**	**0**	**0**	**9**	**0**	**11**	**0**	**601**

ARMM, Autonomous Region in Muslim Mindanao; CAR, Cordillera Administrative Region; NCR, National Capital Region.
Source: NDHRHIS/RPA001, 31 December 2011.

ANNEX D. Gender distribution by health occupation and cadre

Occupational category/cadre	Gender		Total
	Male	Female	
Doctors	7568	9553	17 121
Nurses	6381	24 123	30 504
Midwives	102	14 512	14 614
Dentists	548	1147	1695
Pharmacists	171	2868	3039
Medical technologists	1046	3970	5016
Nutritionists	18	956	974
Occupational therapists	28	74	102
Physical therapists	178	312	490
Radiology technologists	423	321	744
X-ray technologists	139	80	219

Source: NDHRHIS, HHRDB, Department of Health, 31 December 2011.

ANNEX E. Health workers by age group and cadre

Age	Profession								
	Physical therapist	Medical technologist	Occupational therapist	Pharmacist	Nutritionist	Dentist	Midwife	Nurse	Doctor
<30 years	300	1729	41	950	191	151	1181	11 583	2386
30–39	107	1366	26	854	204	576	5252	6813	5281
40–49	16	594	17	464	312	669	3540	2946	4949
50–59	18	536	12	242	160	199	3379	2403	2160
>60	13	198	2	184	36	75	407	1683	2095
Total	**454**	**4423**	**98**	**2694**	**903**	**1670**	**13 759**	**25 428**	**16 871**

Source: NDHRHIS, Department of Health, HHRDB, 31 December 2011.

ANNEX F. Deployment of RNHeals Batches II–IV

Batch	Period of deployment	Number of nurses or midwives deployed	Budget (Philippine pesos)
Batch II	October 2011 to December 2012	11 500 Nurses	1 399 550 000.00
	October 2011 to December 2012	1000 Midwives	91 700 000.00
Batch III	March 2012 to December 2012	10 000 Nurses	817 000.00
	March 2012 to December 2012	2944 Midwives	216 619 078.40
Batch IV	January 2013 to December 2013	22 500 Nurses	2 286 180 000.00
	January 2013 to December 2013	4379 Midwives	315 288 000.00

Source: HHRDB, Department of Health, 2012.

ANNEX G. Deployed MPPUP per region

Region	Medical Specialist II (Part-time)	Medical Specialist II (Full-time)	Medical Officer III
I - Ilocos Region	11	1	-
II - Cagayan Valley	2	-	-
III - Central Luzon	2	-	1
IVA - CALABARZON	4	1	-
IVB - MIMAROPA	-	-	4
V - Bicol Region	3	-	6
VI - Western Visayas	11	1	5
VIII - Eastern Visayas	5	-	1
IX - Zamboanga Peninsula	9	1	3
X - Northern Mindanao	14	-	1
XI - Davao Region	15	-	4
XII - SOCCSKSARGEN	4	-	-
XIII - Caraga	2	-	-
NCR	13	3	14
CAR	7	-	8
Total	**107**	**7**	**49**

CAR, Cordillera Administrative Region; MPPUP, Medical Pool Placement and Utilization Program; NCR, National Capital Region.
Source: HHRDB, Department of Health, 2012.

ANNEX H. DTTB distribution

Region	Number of DTTB
I - Ilocos Region	8
II - Cagayan Valley	6
III - Central Luzon	3
IVA - CALABARZON	3
IVB - MIMAROPA	7
V - Bicol Region	3
VI - Western Visayas	7
VII - Central Visayas	8
VIII - Eastern Visayas	15
IX - Zamboanga Peninsula	7
X - Northern Mindanao	14
XI - Davao Region	2
XII - SOCCSKSARGEN	1
XIII - Caraga	4
CAR	11
ARMM	7
Total	**106**

ARMM, Autonomous Region in Muslim Mindanao; CAR, Cordillera Administrative Region; DTTB, Doctors to the Barrios; NCR, National Capital Region.
Source: HHRDB, Department of Health, 2012.

ANNEX I. Doctorless municipalities

Region	Number of municipalities
I - Ilocos Region	3
II - Cagayan Valley	11
III - Central Luzon	2
IVA - CALABARZON	2
IVB - MIMAROPA	3
V - Bicol Region	0
VI - Western Visayas	2
VII - Central Visayas	1
VIII - Eastern Visayas	11
IX - Zamboanga Peninsula	2
X - Northern Mindanao	5
XI - Davao Region	1
XII - SOCCSKSARGEN	1
XIII - Caraga	4
CAR	5
ARMM	1
Total	**54**

ARMM, Autonomous Region in Muslim Mindanao; CAR, Cordillera Administrative Region; DTTB, Doctors to the Barrios; NCR, National Capital Region.
Source: HHRDB, Department of Health, 2012.

ANNEX J. Department of Health NCHFD staffing standards for Level I–IV hospitals

Hospital type	Level I	Level II			Level III			Level IV		
Authorized bed capacity	15	25	50	75	100	150	200	300	400	500
Doctor	5	7	12	25	78	101	122	265	325	375
Nurse	20	21	30	40	82	105	135	217	272	329
Midwife	0	0	0	0	2	3	4	7	12	12
Dentist	0	1	1	1	1	2	3	4	5	5
Nutritionist	1	1	1	2	2	3	4	6	8	10
Pharmacist	1	1	2	4	6	9	11	17	22	29
Occupational therapist	0	0	0	0	0	0	0	2	2	2
Physical therapist	0	0	0	0	0	0	0	10	10	10
Medical technologist	3	3	7	8	13	17	18	26	31	38
Radiology technologist	1	1	3	4	6	7	7	8	10	12
X-ray technologist	0	0	0	0	0	0	0	0	0	0

Source: National Center for Health Facility Development (NCHFD), Department of Health, 2009.

ANNEX K. Prescribed parameters for workforce projection model

The workforce projection model utilized the following parameters in calculating the workforce requirements:

1. Starting year
2. Preferred HRH (specify) to population ratio
3. Number of HRH (specify) at beginning of year
4. HRH attrition rate
5. Current salary costs/HRH
6. Current cost to train HRH
7. Exponential growth rate per annum of licensed doctors
8. Cost to train (medical school)
9. Salary cost

The workforce projections were adapted to make the models more appropriate to the Philippines. This modification included using weights for geographical area features, regional income and cultural diversity. The weight-adjusted projection model was cleared with the model developers and the statisticians of WHO Headquarters. The adaptation to Philippine conditions corrected the projection models with the following weights:

- socioeconomic – utilized the socioeconomic index based on the average income class of the provinces in the region;
- geographic access – based on the average accessibility of the provinces in the region (e.g. terrain); and
- cultural factor – based on the average proportion of ethnic people residing in the provinces in the region.

Each weight category had a 5-point weight classification, ranging from 1 (most favourable, e.g. very accessible) to 5 (least favourable, e.g. least accessible).

Weights used for geographic, cultural and socioeconomic indices			
Region	**Geographic access (weight)**	**Cultural factor (weight)**	**Socioeconomic (weight)**
REGION I	0	0.17	0
REGION II	0.22	0.17	0.11
REGION III	0	0	0
REGION IV	0.11	0.08	0.11
REGION V	0.33	0	0.11
REGION VI	0.22	0	0.11
REGION VII	0.11	0	0
REGION VIII	0.33	0	0.11
REGION IX	0.33	0.08	0
REGION X	0.33	0.17	0.11
REGION XI	0.11	0.08	0
REGION XII	0.33	0.17	0.11
CARAGA	0.33	0.17	0.11
NCR	0	0	- 0.11
CAR	0.33	0.33	0.22
ARMM	0.33	0	0.22

Notes:
Socioeconomic index: based on the average income class of provinces in the regions
Geographic access: based on the average accessibility of provinces in the regions (i.e. terrain)
Cultural factor: based on the average proportion of ethnic people residing in provinces in the regions.

Geographic access	Cultural factor (indigenous population)	Socioeconomic index (income class)
5 = 0.33	81% –100% = 0.33	4 = 0.33
4 = 0.22	61% – 80% = 0.25	3 = 0.22
3 = 0.11	41% – 60% = 0.17	2 = 0.11
2 = 0	21% – 40% = 0.08	1 = 0
1 = 0	0% – 20% = 0	

Source: HRHMP, Department of Health, 2005.

Sample projection for physicians in Region 7

The HHRDB applies the workforce projection model in determining requirements for human resources for health positions. For example, in projecting for physicians, the following input and data sources were utilized:

Input	Source
Preferred physician-to-population ratio	WHO prescribed: 23 HRH to 10 000 population or 1 physician to 10 000 population
Number of physicians at the beginning of year	**NDHRHIS Statistical Report, December 2010**
HRH attrition rate	Median for all regions based on the HRH Master Plan 2005–2030
Exponential growth rate per annum of licensed physicians	**Based on the physician licensure examination for 2006 to 2010**
Annual population growth rate	Computed using the following: $APGR_{\text{base year}} = \frac{\ln (P_t/P_o)}{t}$
Population	National Statistics Office-projected population (medium assumption)

Source: HHRDB Department of Health, 2012.

A major data source is the NDHRHIS Statistical Report on the number of physicians at the beginning of year. A word of caution must be applied in using data from NDHRHIS since it still has the following limitations at this point in time:

1. Baseline data came from 2006 HRDU-coordinated surveys of health facilities in the regions and have not yet been extensively updated.
2. A series of advocacy training in 2010–2011 prioritized Bureau of Health Facilities and Services (BHFS)-licensed facilities, level III and higher, more than field health facilities, resulting in disproportionately higher numbers of HRH in BHFS-licensed facilities compared to field health facilities.
3. There were 1812 BHFS-licensed facilities in 2010, both government-owned (730) and privately owned (1082), with a total of 1098 (61%) facilitities in the NDHRHIS.
4. NDHRHIS covered more government-owned facilities (71% or 519) than privately owned facilities (54% or 579).
5. Only 45% of the 1098 facilities in the NDHRHIS have registered users.

Given these limitations, the input and assumptions for calculating workforce projections for physicians for 2010, 2015 and 2020 are presented in the table below:

	Input	Assumptions
Starting year	2010	
Preferred doctor-to-population ratio	0.100	Preferred HRH ratio is based on WHO's recommendations of 23 HRH to 10 000 population and 1 doctor to 1000 population.

	Input	Assumptions
Starting year	2010	
Number of doctors at beginning of year	16 779	Number at the beginning of the year is based on statistical data from NDHRHIS (December 2010)
Doctor attrition rate	16.42%	Attrition rate: median for all regions based on HRHMP 2005–2030
Exponential growth rate per annum of licensed doctors	-0.031	Computed based on published results of the Professional Regulation Commission licensure exam for physicians 2006–2010

Source: HHRDB Department of Health, 2012.

Based on these assumptions and input, the workforce supply and workforce projection for 2010, 2015 and 2020 in **Region 7** resulted in the following figures:

Year	2005	2010	2015	2020
Doctor licensure patterns		2218	1893	1616
Annual population growth rate		0.0195	0.0182	0.0164
Population	6 357 900	7 029 300	7 740 900	8 456 000
Maximum growth of doctors		2938	2942	2958

Source: HHRDB, 2012.

Workforce projection

Year	2010	2015	2020
Requirements	703	774	846
Doctor supply at beginning of year	1061	1250	1251
Surplus/(Deficit)	*358*	*476*	*406*

Source: HHRDB Department of Health, 2012.

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