Human Resources for Health Country Profile

INDONESIA

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Content

Annexes

Acronyms

Askes	Health Insurance
Askeskin	Health Insurance Scheme for Poor People
BDEHRH	Board of Development and Empowerment on Human Resources for Health
BPS	Central Statistics Agency
BKN	National Civil Servant Agency
BKD	Local Civil Servant Agency
CPMHRH	Centre for Planning and Management of Human Resources for Health
CCF	Country Coordination and Facilitation
DHO	District Health Office
GoI	Government of Indonesia
HRIS	Human Resources Information System
HRH	Human Resources for Health
Jamkesmas	Community Health Insurance
Jamsostek	Workforce Social Security
MoH	Ministry of Health
MoF	Ministry of Finance
MENPAN	Ministry for The Empowerment of State Apparatus
NGO	Non-Governmental Organization
NCDs	Non-Communicable Diseases
PHO	Provincial Health Office
PTT	Contracted Staff
PNS	Civil Servant
RPJMN	National Medium Term Health Plan
RPJP-K	Long Term Development Plan in Health
SEARO	South-East Asia Regional Office
SKN	National Health System
UHC	Universal Health Coverage
UHH	Life Expectancy
WHO	World Health Organization

Tables

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Executive Summary

The Public Health Reform Roadmap by the Ministry of Health put priority reforms on financing health care; drugs and health equipment availability; health management in the remote, country borderline areas and outer islands including human resources for health (HRH); and healthcare services. In the Strategic Plan document of the Ministry of Health year 2010-2014, HRH development is one of top eight priorities in health development. It includes several strategic activities such as HRH planning and management, pre-service and in service trainings, HRH quality including registration and certification and other management and technical support for HRH development program.

Along with most social sectors, the health sector has been undergoing a process of decentralizing many responsibilities from central ministry to the district level particularly to the Provincial and District Health Offices. This has had implications on human resource planning and management which include the need for accurate and timely data and information on HRH. Most of the data required for this HRH country profile is still limited or incomplete. It has become clear that there is an urgent need to strengthen national health information system. Some key issues in HRH information need to address including weak coordination among stakeholder, inadequate use for decision making, various capacity of human resources in data processing of each level and lack of timely reporting and feedback. Special attention is required at both regional and national levels to create an up-to-date HRH information system.

Health services are provided by both public and private institutions. In general, the ratio of health workers per 1000 population has increased from 1,42 per 1000 population in year 2009 to 2,11 per 1000 population in year 2010. The highest number of cadre is nurses with 160,074 and the lowest number is physiotherapist with 2,587. Imbalance distribution remains one of key issues not only between urban and rural but also among regions in Indonesia. The highest number of health workforces remains in Java/Bali . Migration or movement of the health workforce within and across country has become a great attention. So far in 2009 there were approximately 2892 nurses work in United Emirate Arab, United State of America, Saudi Arabia, Kuwait, the Netherlands, Singapore, Japan, and Norway. Distribution of health workers based on gender is also another issue, although the exact data is unavailable. There is a tendency of increasing female medical doctors and dentists, for example in mid 2010 the percentage of contract female doctors was 56% while the contract female dentists was 81%. This document failed to describe the age distribution by cadre and the public – private distribution by cadre due to lack of data. It is estimated 60 to 70 percent of publicly employed health worker engaged in dual practice, mainly in private practice and private facilities.

Comment [s1]: What is the percentage?

Production of health workforce has been continuously increasing from year 2004 to 2009 especially in private health education institutions. Accreditation of health education institutions was conducted to ensure the quality of graduates. In-service training for health workforce is provided through technical and clinical trainings, management and leadership training and other professional development trainings.

Comment [s2]: Give number or % to show the increasing production of HWF

Projection of the health workforce requirement was developed for the HRH plan, which involved participation of stakeholders. The method used was the ratio of health workers to the certain value i.e. the health status measured by the life expectancy target.

To improve deployment and distribution for HRH especially in remote and underserved areas, the MoH encourage the local government to provide additional incentives, scholarship, and other facilities such as vehicles, housing, telecommunication equipment and electricity as well as safety at workplace.

This document showed that Human Resource Information System need to be strengthened both in local and national level.

Introduction

The document on the Human Resources for Health profile for Indonesia aims to provide a comprehensive picture of the health workforce situation in Indonesia. Collecting the data on HRH was quite challenging, as many of the secondary data requested for the profile template was either unavailable or incomplete. The functioning of the Indonesian CCF team was helpful to share the data collected from the stakeholder. However, most of the HRH data was estimation of HRH requirement based on the health facility standard.

This profile therefore is expected to become important contribution in strengthening the HRH information system in the country through the establishment of baselines for evidence based decision making and policy development at country and regional levels.

The development of the Indonesian Human Resources for Health (HRH) profile is the first step in the whole process of developing and implementing a national HRH Observatory. Furthermore, the HRH profile can be seen as a national resource for producing, sharing and utilizing health workforce information and evidence to support.

Purpose

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

- Providing a comprehensive picture of the Health Workforce situation;
- Systematically presenting the HRH policies and management situation to help monitoring the HRH stock and trends;
- Communication with and between policy-makers and stakeholders;
- Strengthening the HRH information system by establishing evidence for baselines and trends;
- Facilitating information sharing and cross-country comparisons.

The study has shed light on:

- The current composition of the health workforce and future requirements for meeting the priority goals of the health sector development strategy;
- The geography, demography, and economic situation of the country;
- The country's system of health services, and its governance and policies;
- A comprehensive picture of the health workforce situation in the country;
- HRH stock and trends by category and distribution.

Methodology

This document was written mainly using secondary data obtained from the reports at the Ministry of Health, Republic of Indonesia such as the annual health profile, the annual BDEHRH profile and the document of brief information on HRH published by the BDEHRH. Information collection was done basically using desk review of the key documents in the line ministries namely, health, local government, finance and education. Other documents came from The National Workshop of HRH Plan Development, which was conducted by the Indonesian Country Coordination and Facilitation (CCF) team on HRH.

Scope of the HRH profile

The HRH profile provides a summary of the following elements:

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

1. Country context

1.1 Geography and demography

Indonesia is located on the equator and situated between Asia and Australia continent and between the Pacific and Indian Ocean. The country shares land borders with Papua New Guinea, East Timor, and Malaysia. Indonesia consists of 17,508 islands and become the largest archipelago country in the world. With over 238 million people, it is the world's fourth most populous country. The nation's capital city is Jakarta.

It has 33 decentralised regions and 497 districts. Results of the 2010 population census (BPS, 2010) show that, Indonesia has a population of 234,2 million with an annual growth rate of 1.18%. Indonesia is an archipelagic country extending 5,120 kilometres from east to west and 1,760 kilometres from north to south. Jawa Barat region has the highest population of 43 million. Indonesia's terrain is mainly coastal lowland with mountains on some of the larger islands. The climate is tropical with high humidity. The rainy season is from October to April.

Indonesia includes numerous ethnic, cultural and linguistic groups, some of which are related to each other. Since independence, Indonesian is the language of most written communication, education, government, and business.

One of the characteristics of Indonesian Population is the uneven growth between islands and provinces. Most of the Indonesian population lives in Java Island, even though the total land area is less than 7 percent from the total land area of Indonesia. However gradually Indonesian population percentage that live in Java Island decreases from about 59,1 percent in year 2000 and predicted 55,5% in year 2025 (BPS, 2011).

Figure 1 Map of Indonesia

According to Central Statistics Agency (BPS, 2010), approximately 54% of population lives in urban areas while the remaining 46% lives in the rural areas. It has a population growth rate of approximately 1.07% and a population density of 134 persons per square kilometre. The fertility rate reported at 2.13 births per woman in 2009, according to the World Bank. According to the Central Statistical Agency 2010, about 66% of the population belonged to the age group of 15-64 years of age. For detailed information please see tables 1.1. and 1.2.

Table 1.1 Percent Population Distribution by Age Group and year

Age Group	2000	2005	2010
0–14 years	30.3%	28.7%	27.4%
15–64 years	64.4%	65.8%	66.8%
65+ years	4.7%	5.4%	5.9%
Total	100%	100%	100%
Total population	205 million	218 million	235 million

Source: BPS, 2010

Table 1.2 Population distribution by Sex

Year	Total*	Male*	Female*	Male/Female (%)	Growth rate (%)
2010	235	117	118	99	1.10
2005	218	110	108	101	1.3
2000	205	102	103	99	1.49

*unit in million

Source: BPS, 2010

The average Indonesian population growth each year decreases in 2000-2010 period. In 1990-2000 periods, Indonesia population grows at 1.49% each year, then in 2000-2005 period and 2005-2010 period declines to 1.33 % and 1.10 %.

1.2 Economic context.

Indonesia experienced a severe economic depression in the late 1998. Since 2004, the national economy has recovered and undergone another period of rapid economic growth. Indonesia's overall macroeconomic picture is stable. By 2004, real GDP per capita returned to pre-financial crisis levels and income levels are rising. In 2009, domestic consumption continued to account for the largest portion of GDP, at 58.6%, followed by investment at 31.0%, government consumption at 9.6%, and net exports at 2.8%. Investment realization had climbed in each of the past several years, until the global slowdown in 2009. It resumed its rebound in 2010 (USDS, 2011).

As the ASEAN Chairman for 2011, Indonesia currently has a key role in framing the future goals of the member of The Association of South-East Asian Nations (ASEAN).

Table 1.3 Economic indicators

Indicators	2008	2009	2010
GDP (in trillion rupiahs)	4951,4	5613,4	3068,6
National debt as % of GDP	28.6	27.4%	25.5%
Economic aid as % of GDP	NA	NA	1.1%
Proportion of budget spent on health as % of GDP	2.5%	2.0%	2.5%
Income per capita (in PPP)	3900	4000	4200
Proportion of population living below poverty line	35	32	31
Proportion of under 5 with severe malnutrition	5.4%	NA	4.9%
Unemployment rate	8,4	7,9	7,4
Inflation rate	11,1	2,9	2,4

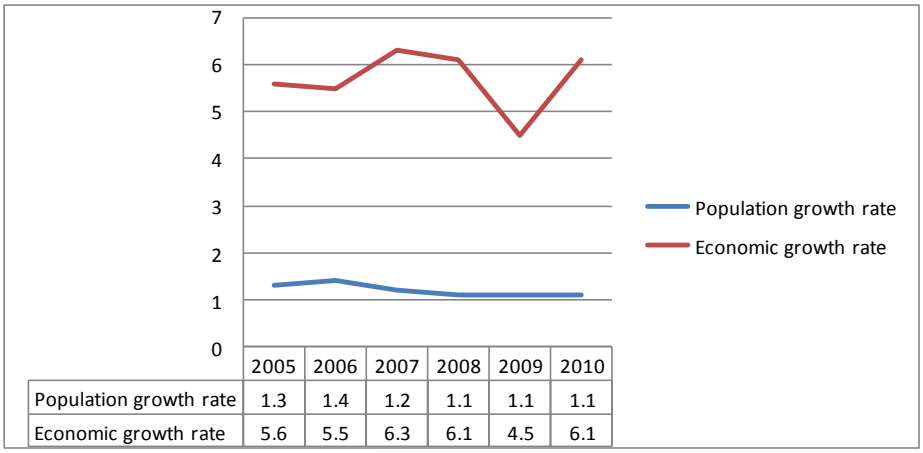
Source: BPS, 2010; World Bank, 2011

NA: Not available

Comment [s3]: Too short. If possible, use the same year as shown in population distribution: 2000 – 2005 – 2010,.

Comment [s4]: Re-check the 2010 GDP, is it true that it reduced a lot compared with 2008 and 2009 GDP, even the inflation rate is better?

Figure 2 Trends of Population growth rate and economic growth rate in the past 5 years



	2005	2006	2007	2008	2009	2010
Population growth rate	1.3	1.4	1.2	1.1	1.1	1.1
Economic growth rate	5.6	5.5	6.3	6.1	4.5	6.1

Source: BPS, 2010; World Bank 2011

1.3 Political context

Indonesia is a unitary state, headed by an executive President and Vice President who are directly elected for a five-year term by popular vote. The President and Vice President govern with the assistance of an appointed Cabinet.

Indonesia has transformed to become South-East Asia's largest and most vibrant democracy. A robust media and civil society and direct and fair elections are at the heart of its strengthening democracy. It has also undergone a process of decentralisation since 1999, which has seen control of large amounts of public expenditure and service delivery transferred from the central government to provincial and local governments. Sub-district and district leaders and provincial governors win office through direct elections. Voters are also able to select provincial and district-level parliamentarians.

Enactment of the law on local autonomy in 1999 marked the beginning of the decentralization system in Indonesia. Since 2005, heads of local government (governors, regents, and mayors) have been directly elected by popular election.

Villages are the smallest political-administrative units. The village's parliamentary body is the political voice of communities in the identification, discussion and prioritization of problems and actions to be taken at village level. It can also refer any relevant issue to higher levels (CIA, 2011).

1.4 Health status

Indonesia is on the track to meet Millennium Development Goals target. The delivery of basic human services at the local level is critical to the health of Indonesians. Under Indonesia's decentralization law, local governments are responsible for the delivery of health care, water, and sanitation.

Table 1.4 also shows that Cardiovascular disease represents 30 % of national health mortality. While diarrhea represents 21% of national health morbidity. These indicators may reflect a double burden between communicable and non communicable diseases.

Currently, an integrated effort is going on to develop the National Strategy on NCD Control, adapting the Global and Regional Strategy. The three major components are adopted, i.e., surveillance of risk factors, integrated health promotion and reform of service delivery.

Table 1.4 Main causes of morbidity and mortality

Main causes of morbidity	Value (%)	Main causes of mortality	Value (%)
Diarrhoea and gastroenteritis	21%	Cardiovascular disease	30%
Dengue haemorrhagic fever	17%	Communicable, maternal, perinatal and nutritional conditions	28%
Typhoid fever	12.3%	Cancer	13%
Labor and pregnancy problem	12%	Other NCDs	10%
Dyspepsia	7.4%	Injuries	9%
Injury	6.5%	Respiratory diseases	7%
Essential hypertension	5.9%	Diabetes	3%

Main causes of morbidity taken from 10 top diseases in the inpatient hospital (MOHRI, 2011)
Main causes of mortality taken from non communicable disease (WHO, 2011)

Table 1.5 Health indicators

Indicators	Both sex	Source and year
Life expectancy	70.2	RPJMN, 2010
Crude mortality rate	6.26	CIA World Factbook,2011
Under-5 mortality rate	41	WHO, 2010
Maternal mortality rate	228	CSA, 2008
HIV/AIDS prevalence rate	8.66	MoH, 2009
% with access to safe water	52%	WHO, 2010
% with access to sanitation	80%	WHO, 2010

Comment [s5]: Please check the source data from Bappenas (National Development Planning Board)

In line with the decreasing of Infant Mortality Rate, the Life Expectancy (Umur Harapan Hidup / UHH) has increased from 66.2 years in 2004 to 70.2 years in 2010. The Indonesian government has set up the target of 102 maternal mortality deaths in 2015 as in 2008 there was 228 mother deaths per 100,000 live births. HIV/AIDS prevalence was estimated at 8.66% in 2009 with substantial differences between geographical areas and population groups.

2. Country health system

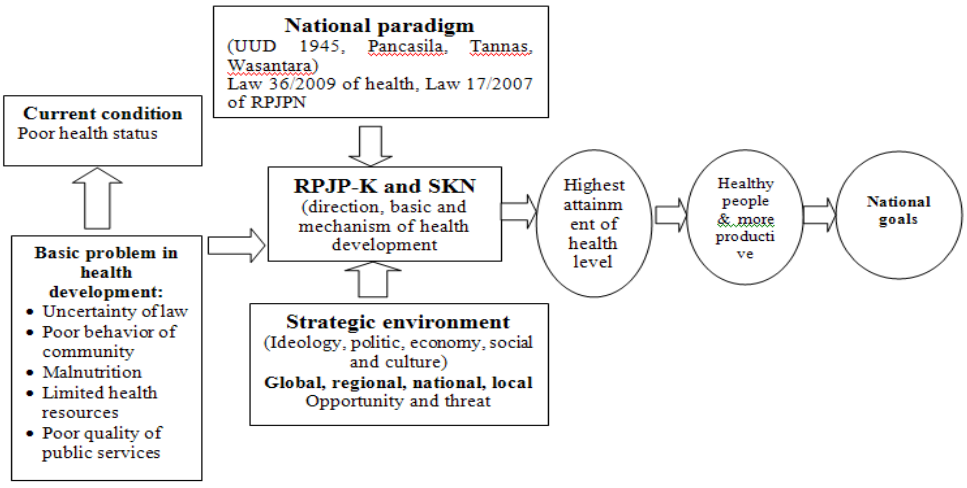
2.1 Governance

The organization structure administratively followed the governance levels i.e. the central level, the province level and the district level. In the central level, the highest level is Echelon I (Director General) which have some echelon II levels (Director level) and several functional units such as national and other vertical hospitals, national training centres and so on. At the province and the district levels, the organization structure of public sector is mostly at the level of echelon II and below.

The most recent Indonesian National Health System (NHS) was released in year 2009, with basic principles such as support human rights, synergism and dynamic partnership among stakeholders, commitment and good governance, regulation and law enforcement, anticipative and pro active for strategic environmental changes, gender responsive and local wisdom. The governance of NHS consists of six subsystems as follow:

1. Health Efforts
   These health efforts include promotion, prevention, curative and rehabilitation.
2. Health Financing
   Health financing for community health service is public good under the responsibility of the government, while health financing for individual health care is private good under the responsibility of individual, except health financing for poor people covered by the government through community health insurance (JAMKESMAS). It is expected by year 2014 Indonesia will achieve Universal Health Coverage (UHC) through social health insurance.
3. Human Resources for Health
   The development and empowerment of HRH emphasizes on four strategies i.e. strengthening the HRH planning, increasing HRH supply (production), improving HRH management (distribution and utilization), and strengthening supervision and control the quality of HRH.
4. Supply of Pharmacy, Health Equipment and Food
   This subsystem is to include aspects of quality, efficacy, distribution, drug rational usage etc.
5. Management and Health Information
   This subsystem covers health policy, health administration, health regulation and health information.
6. Community Participation
   The last subsystem within the NHS is community participation including the private sector, which is the subject to play important roles in health development.

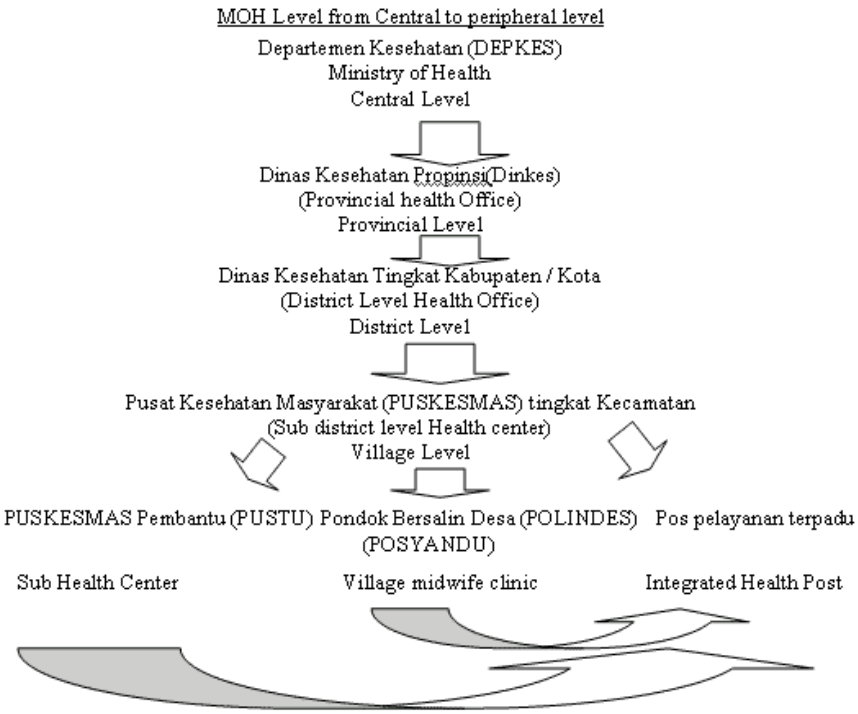
The figure 3 below describe the framework of the health development plan and the NHS.



Further on February 2010, the Ministry of Health released the Public Health Reform Roadmap, which prioritized reforms on financing health care; drugs and health equipment availability; health management in the remote, country borderline areas and outer islands including human resources for health (HRH); and healthcare services. In the Strategic Plan document of the Ministry of Health year 2010-2014, HRH development is one of top eight priorities in health development. It includes several strategic activities such as HRH planning and management, pre-service and in service trainings, HRH quality including registration and certification and other management and technical support for HRH development program.

HRH had become the main concern of the government as well as the political leader especially at the country level. The President instructed through decree number 1/2010 which emphasized on the need to increase the number of qualified health personnel for remote, underserved, country borderline areas and outer islands with certain incentive. Further, in the decree number 3/2010, the President instructed that starting from year 2010 to improve HRH information through HRH mapping, increase the permanent job vacancy allocation for the remote, underserved, country borderline areas and outer islands especially for the most strategic health personnel.

Figure 4. Organizational structure of health system (SEARO, 2011)



Under decentralization system, provincial and district level have broader authority in the regional development. In the other hand, Ministry of Health providing guidance, supervision and policy formulation. According to health law number 36 year 2009, government responsibility in health sector including planning, actuating, controlling, supervising and monitoring health provision to achieve equitable and affordable health care services.

Along with most social sectors, the health sector has been undergoing a process of decentralizing many responsibilities from central ministries to the district level particularly to the office of the Provincial and District Health Officer. This has had implications on human resource planning and

recruitment. For example, to meet their need they can recruit and hire the health workforce under district civil servant.

2.2 Service provision

The concept of community health centres or in Indonesia "Puskesmas" was introduced in 1968. They were expected to be available in every sub-district and a public referral hospital should be located within each district. Currently, at least one *puskesmas* is generally available per 30,000 people, and additional sub-health centres (*pustu*) can be accessed at the village level. The number of puskesmas is approximately 9,133 health centres (as of June 2011, MOH). This centre headed by either, doctor or nurses or other qualified health workers. The main tasks of Puskesmas have been basic care services, immunization, antenatal and postnatal care, health environment and dental services. Some puskesmas have inpatient facility.

To improve community access to health services, since year 2006 the MoH have launched the Alert Village (Desa Siaga) and Village Health Posts (Poskesdes) as the community base health program (UKBM), to cover more than 70,000 villages throughout Indonesia. Every village must be served by at least one midwife. A village health post must be served by one midwife and one nurse.

In addition to public facilities, private practices are operated by doctors, nurses and midwives, in many cases by the same personnel as are employed in public facilities. Based faith organization such as Muhammadiyah and Aisyiyah Health care showed a consistent engagement in the health sector. Community health workers are an active participation of community in the health development. They were chosen by their community to assist health staff deliver the health services (UNICEF, 2010).

For referral, hospitals are available at the district level, provincial level and at national level. About 55% out of the 1.371 hospitals owned by private institutions and state for profit enterprises (BDEHRH, 2010). The hospitals are classified into class A, class B, class C and class D based on the national standard for hospitals as regulated by the Ministry of Health.

2.3 Health care financing

Health care services have been financed from several resources, inclusive of government allocation, private sector, direct out of pocket payment and aid from other countries. Government has remained the biggest source of health financing in the public sector. Indonesia spends relatively low on health services. Estimated total expenditure on health (per capita, in 2009) was $ 99 in Indonesia. This number is increasing steadily from previous year, from US$ 78 in 2005 and $ 87 in 2006 (CIA, 2011).

Since year 2005, GoI introduced Health Insurance Scheme for Poor People called Askeskin which evolved into Community Health Insurance scheme or Jamkesmas in 2008 targetting poor people who are unable to afford health service. Those two programs have increased access to care and financial protection for the poorest. There are three major program for existing health insurance schemes, civil servant social health insurance scheme (Askes), private employee social health insurance scheme (Jamsostek) and health insurance for poor population (Askeskin). Civil servants and their dependents are covered under the *Askes* program, which is administered by a for profit state enterprise, P.T Askes. Private employee has been covered by Jamsostek which is also administered by a for profit state enterprise. Meanwhile, Askeskin administered by Ministry of Health.

According to the MoH data year 2010, approximately 59,07% of total Indonesia population have been covered by health insurance, consisting of 54,8% Jamkesmas, 22,6% local government health insurance, 12,4% Askes, 3,5% jamsostek, and 6,6% other health insurance including private insurance. It is expected by year 2014, the UHC will reach 245,3 million of population.

2.4 Health information system

Decentralization of the health sector according to Law no. 22/1999 which has been amended by Law no. 32/2004 requires the renewal of health information system. This system demands an integration system between central level, provincial and district health office either from public and private sector. All available data including health facility, health promotion, health financing, HRH, community participation and health management must be integrated.

Extensive support has gone towards providing information technology support to districts, provinces and national levels. Presence of statisticians depends on the policy of each health unit, this made information system not optimal. Most of the district using computers and having access to internet but some in remote or border areas has difficulty on it. It has become clear that there is an urgent need to strengthen national health information system. Key challenges on implementing health information system in health sector include:

- Weak coordination between central, provincial and district health office
- Inadequate use of information system for decision making
- Various capacity of human resources in data processing of each level
- Lack of timely reporting and feedback

Special attention is required at both regional and national levels to create an up-to-date HRH information system.

3. Health Workforce Situation

3.1 Health workforce stock and trends

Table 3.1 shows a general absolute increment in the numbers of dental practitioners, pharmacy practitioners, nursing and midwifery practitioners, non-medical public health practitioners and medical technologist. It is only the 2010 figures that showed a decline in a number from 34.554 in 2009 to 33.7336 in 2010. This happen because the data for medical specialist only collected from public hospital. During the same period, the nurses and midwifes increased from 194.399 to 266.348.

Table 3.1 Health worker/population ratios at national level

Category	2009		2010		Sub-category	2009		2010	
	Number	HW/1000 population	Number	HW/1000 population		Number	HW/1000 population	Number	HW/1000 population
Medical Practitioners	34,544	0.15	33,736	0.15	General Practitioner	17,062	0.07	25,333	0.11
					Medical Specialists	17,482	0.08	8,403	0.04
					Medical Assistants	-	-	-	-
Dental Practitioners	12,673	0.05	21,195	0.09	Dentists	4,878	0.02	8,731	0.04
					Dental Specialists	564	0.00	474	0.00
					Dental Technicians	7,231	0.03	11,991	0.05
Pharmacy practitioners	10,778	0.05	18,022	0.08	Pharmacists	2,007	0.01	6,264	0.03
					Pharmaceutical technicians/ assistants	8,771	0.04	11,758	0.05
Nursing and Midwifery practitioners	194,399	0.84	266,348	1.13	Nursing professionals	136,864	0.59	158,688	0.67
					Midwifery Professionals	54,153	0.23	96,551	0.41
					Nursing- Midwifery Professionals	2,036	0.01	NA	NA
					Nursing Specialists	1,346	0.01	11,109	0.05
					Midwifery Specialists	NA	NA	NA	NA
					Nursing Associate professionals	NA	NA	NA	NA
					Midwifery Associate professionals	NA	NA	NA	NA
					Nursing-Midwifery Associate	NA	NA	NA	NA

Comment [s6]: Re-check: the number of Medical Specialist in 2009 almost equal to GP (even higher)?

Comment [s7]: Re-check: why the number of Med Specialist in 2010 reduced a lot compared to 2009?

Category	2009		2010		Sub-category	2009		2010	
	Number	HW/1000 population	Number	HW/1000 population		Number	HW/1000 population	Number	HW/1000 population
					professionals				
Non-Medical Public Health Practitioners	16,632	0.07	47,692	0.20	Public Health Generalists (D3, S1)	4,519	0.02	18,598	0.08
					Public Health Specialists (S2, S3)	490	0.00	2,766	0.01
					Food and Nutrition Professionals	6,248	0.03	12,823	0.05
					Environmental and Occupational Health Professionals	5,375	0.02	13,505	0.06
					Environment and occupational health inspectors and associates	NA	NA	NA	NA
					Community Health workers	NA	NA	NA	NA
					Community Health Volunteers	NA	NA	NA	NA
Medical Technologists	4,478	0.02	10,266	0.04	Medical Imaging Technicians	2,449	0.01	3,708	0.02
					Medical Technicians	200	0.00	1,028	0.00
					Laboratory Assistants	1,829	0.01	5,530	0.02
					Biomedical technologists	NA	NA	NA	NA
Traditional Medicine Practitioner	NA	NA	NA	NA	Traditional Medicine Practitioner	NA	NA	NA	NA
Veterinary practitioners	NA	NA	NA	NA	Veterinary Public Health Specialists	NA	NA	NA	NA
					Veterinary technicians and assistants	NA	NA	NA	NA
Other Health Workers	1,655	0.01	2,628	0.01	Optometrists	NA	NA	269	0.00
					Physiotherapists	1,655	0.01	2,359	0.01
					Physiotherapy	NA	NA	NA	NA

Comment [s8]: Please check data from Direktorat Yankestrad (DG Nutrition and MCH)

Category	2009		2010		Sub-category	2009		2010	
	Number	HW /1000 population	Number	HW/1000 population		Number	HW/1000 population	Number	HW/1000 population
					Assistants				
					Occupational Therapists	119	0.00	121	0.00
					Occupational Therapy Assistant	NA	NA	NA	NA
					Other health professionals not elsewhere classified	NA	NA	NA	NA
					Other health associate professionals not elsewhere classified	NA	NA	NA	NA
Health management and support staff	60,116	0.26	110,466	0.46	Health Service Manager	NA	NA	NA	NA
					Medical Records Technicians	NA	NA	1,159	0.00
					Support staff	60,116	0.26	109,307	0.46
TOTAL	**328.044**	**1.42**	**498,590**	**2.11**					

Source:(BDEHRH, 2010)

Migration or movement of the health workforce within and across country has become a great attention. Generally, people coming from rural to urban area, it is also happened in the health sector. Many health workers willing to work in a big cities or populous region for economy reason. Therefore, there is an imbalance in distribution across the provinces among health workers. The highest number of health workforces remain in Java/Bali. The situation is worse outside Java/Bali. . The most recent health workforce review conducted by the World Bank found that in Java-Bali, the most populous region in Indonesia, the doctor/populace ratio is 1 doctor for every 3000 people in urban areas, while in rural areas it is only 1 doctor for every 22,000. The number of doctors per population outside Java-Bali is higher, but still only 1 doctor for every 12,000 people in rural areas, and 1 for every 15,000 people in remote areas, while urban areas have 1 doctor for every 2,430 people in urban areas (World Bank, 2009).

As for Indonesia, international migration is not a new issue particularly for nurses. Nurses have sought employment abroad for many reasons, including high unemployment in the health care labour market within country. Several countries have been offering opportunities for nurses to work there. For example Japan through Indonesia Japan Economic Partnership Agreement (IJEPA) required about 1000 Indonesian nurses. Up to year 2011, there were 363 Indonesian nurses sent to work as nurses/assistant nurses in Japan under IJEPA framework. Indonesia is a potential market for international nurse migration. So far in 2009 there were approximately 2892 nurses work in United Emirate Arab, United State of America, Saudi Arabia, Kuwait, the Netherlands, Singapore, Japan, and Norway.

3.2 Distribution of health workforce by category/cadre

MoH has put emphasis on increasing the number, type and quality of health workers over the region. Recruitment of health workers was done using formation of civil servants, contract medical doctors and midwives (PTT) and some special assignment. For the last two years, the total number of the health workforce in service has shown a significant increase of about 52% from 328,044 in 2009 to 498,590 in 2010. In particular, the number of general practitioner has increased from 17,062 to 25,333 and public health generalists have increased from 5,714 to 18,598. Despite the increase of certain number of health workers, the number of support staff has decreased over the last two years.

Table 3.2 Distribution of health workers during 2008-2010 (for past 3 years of available data)

Category	Sub-category	Cadre*	2008	2009	2010
Medical Practitioners	General Practitioner	General Medical Practitioners	20,161	17,062	25,333
	Medical Specialists	Medical Specialists	16,581	17,482	8,403
	Medical Assistants	Medical Assistants	NA	NA	NA
Dental Practitioners	Dentists	Dentists	6,594	4,878	8,731
	Dental Specialists	Dental Specialists	345	564	474
	Dental Technicians	Dental Assistants	NA	NA	NA
		Dental Hygienists	NA	NA	NA
		Dental nurses	5,381	7,132	9,723
		Dental lab technicians	1,445	99	2,267
Pharmacy practitioners	Pharmacists		3,933	2,007	6,264
	Pharmaceutical technicians/ assistants		4,012	8,771	11,758
Nursing and Midwifery practitioners	Nursing professionals		151,385	136,864	157,851
	Midwifery Professionals		66,834	54,153	96,551
	Nursing- Midwifery Professionals		NA	2,036	NA
	Nursing Specialists		972	1,346	2,223
	Midwifery Specialists		NA	NA	NA
	Nursing Associate professionals		NA	NA	NA
	Midwifery Associate professionals		NA	NA	NA
	Nursing-Midwifery Associate professionals		NA	NA	NA
Non-Medical Public Health Practitioners	Public Health Generalists		5,714	4,519	18,598
	Public Health Specialists		128	490	2,766
	Food and Nutrition Professionals		8,196	6,248	12,823

Category	Sub-category	Cadre*	2008	2009	2010
	Environmental and Occupational Health Professionals		7,540	5,375	13,505
	Environment and occupational health inspectors and associates		NA	NA	NA
	Community Health workers		NA	NA	NA
	Community Health Volunteers		NA	NA	NA
Medical Technologists	Medical Imaging Technicians		8,617	2,449	3,708
	Medical Technicians		NA	200	1,028
	Laboratory Assistants		NA	1,829	5,530
	Biomedical technologists		NA	NA	NA
Traditional Medicine Practitioner	Traditional Medicine Practitioner		NA	NA	NA
Veterinary practitioners	Veterinary Public Health Specialists		NA	NA	NA
	Veterinary technicians and assistants		NA	NA	NA
Other Health Workers	Optometrists		NA	NA	269
	Physiotherapists		1.090	1.665	2.359
	Physiotherapy Assistants		NA	NA	NA
	Occupational Therapists		NA	119	121
	Occupational Therapy Assistant		NA	NA	NA
	Other health professionals not elsewhere classified		NA	NA	NA
	Other health associate professionals not elsewhere classified		NA	NA	NA
Health management and support staff	Health Service Manager		NA	NA	NA
	Medical Records Technicians		NA	NA	NA
	Support staff		218,622	60,116	109,307
TOTAL			**527,550**	**328.044**	**498,590**

Source: Data year 2008 and 2009 taken from MoH
Data year 2010 taken from BDEHRH (Data medical specialist only in public hospital)

3.2.1 Gender distribution by health workforce categories/cadre

The total number of women working in the health sector is various depend on the type of profession. For example, nursing and midwifery professions are female dominated, while others are male dominated. Currently there is a tendency of increasing female medical doctors and dentists. However, there is no exact data at national level about gender distribution. The table 3.3 below only shows the gender distribution of the contract medical doctors and dentist employed by MOH in mid year 2010. The percentage of female doctors is 56%, while the percentage of female dentist is 81%.

Table 3.3 Gender distribution by health workforce category/cadre

Category	Sub-category	Cadre*	Total	Female	% Female
Medical Practitioners	General Practitioner		329	185	56
	Medical Specialists		NA	NA	NA
	Medical Assistants		NA	NA	NA
Dental Practitioners What about Pharmacists, Nurses?	Dentists		78	63	81
	Dental Specialists		NA	NA	NA
	Dental Technicians		NA	NA	NA
TOTAL			407	248	61%

Source: MOH, 2010 (processed from the row PTT data collected from the Bureau of Personnel in Mid year 2010 from regional 1 and regional 2).

3.2.2 Age distribution by occupation/cadre

According to the civil service rules and regulations (President decree No. 65 year 2008), civil servants in Indonesia should retire by the age of 60. For civil servants who hold non functional positions or structural positions below echelon II, the retirement age should not exceed 56 years old. However there is no exact data on age distribution by cadre.

Table 3.4 Workers by age group and cadre

Category	Sub-category	Cadre*	≤30 Yrs	31-40	41-50	≥51
Medical Practitioners	General Practitioner		NA	NA	NA	NA
	Medical Specialists		NA	NA	NA	NA
	Medical Assistants		NA	NA	NA	NA
Dental Practitioners	Dentists		NA	NA	NA	NA
	Dental Specialists		NA	NA	NA	NA
	Dental Technicians		NA	NA	NA	NA
Pharmacy practitioners	Pharmacists		NA	NA	NA	NA
	Pharmaceutical technicians/		NA	NA	NA	NA

Comment [s9]: Please check data from IDI, PDGI, ISFI, IBI and PPNI

Category	Sub-category	Cadre*	≤30 Yrs	31-40	41-50	≥51
	assistants					
Nursing and Midwifery practitioners	Nursing professionals		NA	NA	NA	NA
	Midwifery Professionals		NA	NA	NA	NA
	Nursing- Midwifery Professionals		NA	NA	NA	NA
	Nursing Specialists		NA	NA	NA	NA
	Midwifery Specialists		NA	NA	NA	NA
	Nursing Associate professionals		NA	NA	NA	NA
	Midwifery Associate professionals		NA	NA	NA	NA
	Nursing-Midwifery Associate professionals		NA	NA	NA	NA
Non-Medical Public Health Practitioners	Public Health Generalists		NA	NA	NA	NA
	Public Health Specialists		NA	NA	NA	NA
	Food and Nutrition Professionals		NA	NA	NA	NA
	Environmental and Occupational Health Professionals		NA	NA	NA	NA
	Environment and occupational health inspectors and associates		NA	NA	NA	NA
	Community Health workers		NA	NA	NA	NA
	Community Health Volunteers		NA	NA	NA	NA
Medical Technologists	Medical Imaging Technicians		NA	NA	NA	NA
	Medical Technicians		NA	NA	NA	NA
	Laboratory Assistants		NA	NA	NA	NA
	Biomedical technologists		NA	NA	NA	NA
Traditional Medicine Practitioner	Traditional Medicine Practitioner		NA	NA	NA	NA
Veterinary practitioners	Veterinary Public Health Specialists		NA	NA	NA	NA
	Veterinary technicians and assistants		NA	NA	NA	NA
Other Health	Optometrists		NA	NA	NA	NA

Category	Sub-category	Cadre*	≤30 Yrs	31-40	41-50	≥51
Workers	Physiotherapists		NA	NA	NA	NA
	Physiotherapy Assistants		NA	NA	NA	NA
	Occupational Therapists		NA	NA	NA	NA
	Occupational Therapy Assistant		NA	NA	NA	NA
	Other health professionals not elsewhere classified		NA	NA	NA	NA
	Other health associate professionals not elsewhere classified		NA	NA	NA	NA
Health management and support staff	Health Service Manager		NA	NA	NA	NA
	Medical Records Technicians		NA	NA	NA	NA
	Support staff		NA	NA	NA	NA
TOTAL						

Source: not available.

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3.2.3 Region/province/district distribution by occupation/cadre

Inequities in distribution between provinces can be seen in the table below. The highest number of cadre is nurses with 160,074 and the lowest number is physiotherapist with 2,587.

The categorization of Java and Bali including several provinces such as Jakarta, Jawa Barat, Jawa Tengah, Yogyakarta, Jawa Timur, Banten dan Bali. Meanwhile, categorization of outside Java/Bali including Aceh, Sumatera Utara, Sumatera Barat, Riau, Jambi, Sumatra Selatan, Bengkulu, Lampung, Kepulauan Bangka Belitung, Riau, NTT, NTB, Kalimantan Barat, Kalimantan Timur, Kalimantan Selatan, Kalimantan Tengah, Sulawesi Utara, Sulawesi Selatan, Sulawesi Tengah, Sulawesi Tenggara, Sulawesi Barat, Gorontalo, Maluku, Maluku Utara, Papua Barat and Papua.

Inside Java/Bali, province with the highest ratio of general practitioner is Jakarta by 34.37 per 100,000 populations, whereas the lowest is Banten by 5.05 doctors per 100,000 populations. Outside Java/Bali, province with the highest ratio of general practitioner is Sulawesi Utara by 22.73 per 100,000 populations, whereas the lowest is Sulawesi Selatan by 5.86 doctors per 100,000 populations. The ratio of doctor to population in each province year 2010 can be seen in the figure below.

Table 3.5 Regional/District/province distribution of workers

Category	Sub-category	Cadre*	Total Number	Java/Bali	Outside Java/Bali
Medical Practitioners	General Practitioner		25,333	12,632	12,701
	Medical Specialists		8,403	5,745	2,658
Dental Practitioners	Dentists		8,731	4949	3,782
	Dental Technicians	Dental nurses	9,723	4,265	5,458
Pharmacy practitioners	Pharmacists		6,264	3,031	3,233
	Pharmaceutical		11,758	5,213	6,545

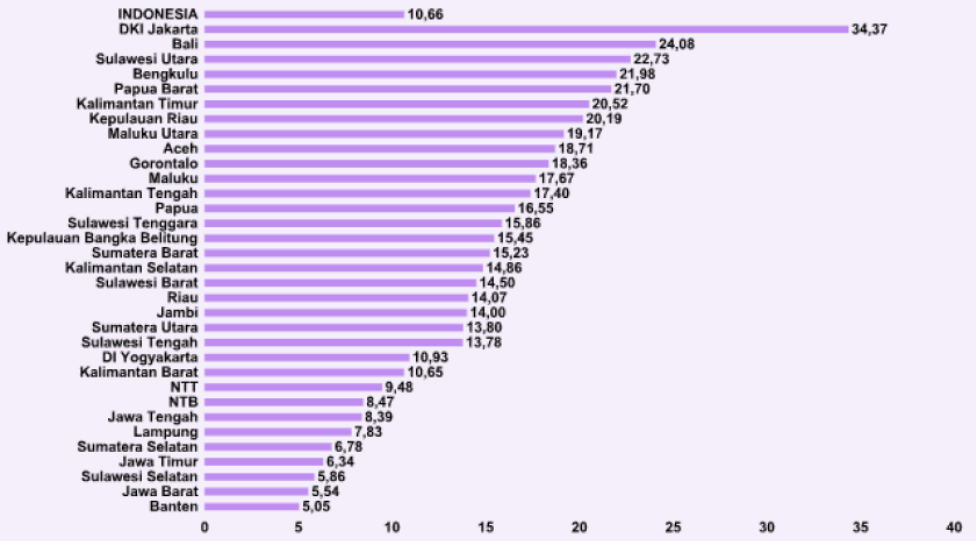
Comment [s10]: If the province data is unavailable, try to have aggregate data based on the similarity of SDH, categorized into Islands of Jawa/Bali, Sumatera, Kalimantan, Sulawesai/Maluku, Papua/Nusa Tenggara. Check from Investment Research data from Prof. Laksono Trisnantoro-UGM (if possible). If the province data is available but too long to cover 33 provinces, it could be wise to put it in annex.

Category	Sub-category	Cadre*	Total Number	Java/Bali	Outside Java/Bali
	technicians/ assistants				
Nursing and Midwifery practitioners	Nursing professionals		160,074	74,595	85,479
	Midwifery Professionals		96,551	39,362	57,189
Non-Medical Public Health Practitioners	Public Health Generalists		21,364	7,790	13,574
	Food and Nutrition Professionals	Nutritionist	12,823	5,031	7,792
	Environmental Health Inspectors	Sanitarian	13,505	4,348	9,157
Medical Technologists	Medical Technicians		9,099	5261	3,838
	Laboratory Assistants	Medical analyst	5,530	2,651	2,879
Optometrists	Optometrists		NA	NA	NA
Physio- and Occupational Therapists	Physiotherapists		2,587	1,464	1,123
Traditional Medicine Practitioner	Traditional Medicine Practitioner		NA	NA	NA
Veterinary practitioners	Veterinary Public Health Specialists		NA	NA	NA
Other Health Workers	Optometrists		NA	NA	NA
Health management and support staff	Support staff		109,307	75,505	33,805
	TOTAL		**501,052**	**251,842**	**249,210**

Source: BDEHRH, 2010, health workers data by each province

Comment [s10]: If the province data is unavailable, try to have aggregate data based on the similarity of SDH, categorized into Islands of Jawa/Bali, Sumatera, Kalimantan, Sulawesai/Maluku, Papua/Nusa Tenggara. Check from Investment Research data from Prof. Laksono Trisnantoro-UGM (if possible). If the province data is available but too long to cover 33 provinces, it could be wise to put it in annex.

Figure 5 Ratio of doctor to population in 2010 (BDEHRH, 2010)



3.2.4 Urban/rural distribution by occupation/cadre

Even though the ratio of health workers per 100,000 populations and their geographical distribution have improved over time, the imbalance distributions remain a big challenge. Rural and remote areas suffer from shortage of essential health workers such as doctors, midwives, nurses, nutritionists and sanitarians. Most of those health workers are not interested in serving those areas, even if they would, mostly in a very short term. The reasons are many; transport and communication problems, lack of basic and social facilities, low salary, low or no compensation, high living cost, lack of security and unclear career options. However a complete data on the urban/rural distribution of health workers is unavailable.

Table 3.6 Urban/Rural distribution of workforce

Category	Sub-category	Cadre*	Total Number	% Urban	% Rural	HW/ 1000 Pop in urban	HW/ 1000 Pop in rural
Medical Practitioners	General Practitioner		NA	NA	NA	NA	NA
	Medical Specialists		NA	NA	NA	NA	NA
	Medical Assistants		NA	NA	NA	NA	NA
Dental Practitioners	Dentists		NA	NA	NA	NA	NA
	Dental Specialists		NA	NA	NA	NA	NA
	Dental Technicians		NA	NA	NA	NA	NA
Pharmacy practitioners	Pharmacists		NA	NA	NA	NA	NA
	Pharmaceutical technicians/ assistants		NA	NA	NA	NA	NA
Nursing and	Nursing professionals		NA	NA	NA	NA	NA

Comment [s11]: Use the DTPK (Underserved) data is possible. At least we have the data to compare.
In this case; data for Urban is Total – DTPK.

Category	Sub-category	Cadre*	Total Number	% Urban	% Rural	HW/ 1000 Pop in urban	HW/ 1000 Pop in rural
Midwifery practitioners	Midwifery Professionals		NA	NA	NA	NA	NA
	Nursing- Midwifery Professionals		NA	NA	NA	NA	NA
	Nursing Specialists		NA	NA	NA	NA	NA
	Midwifery Specialists		NA	NA	NA	NA	NA
	Nursing Associate professionals		NA	NA	NA	NA	NA
	Midwifery Associate professionals		NA	NA	NA	NA	NA
	Nursing-Midwifery Associate professionals		NA	NA	NA	NA	NA
Non-Medical Public Health Practitioners	Public Health Generalists		NA	NA	NA	NA	NA
	Public Health Specialists		NA	NA	NA	NA	NA
	Food and Nutrition Professionals		NA	NA	NA	NA	NA
	Environmental and Occupational Health Professionals		NA	NA	NA	NA	NA
	Environment and occupational health inspectors and associates		NA	NA	NA	NA	NA
	Community Health workers		NA	NA	NA	NA	NA
	Community Health Volunteers		NA	NA	NA	NA	NA
Medical Technologists	Medical Imaging Technicians		NA	NA	NA	NA	NA
	Medical Technicians		NA	NA	NA	NA	NA
	Laboratory Assistants		NA	NA	NA	NA	NA
	Biomedical technologists		NA	NA	NA	NA	NA
Traditional Medicine Practitioner	Traditional Medicine Practitioner		NA	NA	NA	NA	NA
Veterinary practitioners	Veterinary Public Health Specialists		NA	NA	NA	NA	NA
	Veterinary technicians and assistants		NA	NA	NA	NA	NA
Other Health Workers	Optometrists		NA	NA	NA	NA	NA
	Physiotherapists		NA	NA	NA	NA	NA

Comment [s11]: Use the DTPK (Underserved) data is possible. At least we have the data to compare.
In this case; data for Urban is Total – DTPK.

Category	Sub-category	Cadre*	Total Number	% Urban	% Rural	HW/ 1000 Pop in urban	HW/ 1000 Pop in rural
	Physiotherapy Assistants		NA	NA	NA	NA	NA
	Occupational Therapists		NA	NA	NA	NA	NA
	Occupational Therapy Assistant		NA	NA	NA	NA	NA
	Other health professionals not elsewhere classified		NA	NA	NA	NA	NA
	Other health associate professionals not elsewhere classified		NA	NA	NA	NA	NA
Health management and support staff	Health Service Manager		NA	NA	NA	NA	NA
	Medical Records Technicians		NA	NA	NA	NA	NA
	Support staff		NA	NA	NA	NA	NA
TOTAL			NA	NA	NA	NA	NA

Comment [s11]: Use the DTPK (Underserved) data is possible. At least we have the data to compare.
In this case; data for Urban is Total – DTPK.

Urban health workforce = All health workers working <u>in</u> cities, municipalities, and district centres/head offices (including those health workers in other sectors outside health ministries).

Rural health workforce =All health workers working <u>outside</u> cities, municipalities, and district centres/head offices (including those health workers in other sectors outside health ministries).

In early year 2006, the Ministry of Health of the Republic of Indonesia (MoHRI) found out that approximately 30 % out of 7.500 health centers in remote areas were without medical doctors. Further findings were reported during the Identification on the Need of Health Workers conducted by Center for Planning and Management of Human Resources for Health - MoHRI (CPMHRH) in May 2006. The identification process involved 78 districts in 17 provinces of Indonesia (out of 440 districts/municipals in 33 provinces). The report shown that out of 1165 health centers there are 364 health centers (31%) located in remote/underdeveloped/borderland/conflict and disaster areas and other undesirable areas (underserved areas). About 50% of 364 health centers reported the absence of medical doctors, 18% without nurses, 12% without midwives, 42% without sanitarians, and 64% without nutritionists. Compare to the health centers in ordinary areas, the absence of those types of health workers are much lower, for example only 5% health centers without medical doctors. There is no other available data that can be used to estimate urban and rural distribution. The following table 3.6 shown the distribution of health workers in health centers between ordinary areas and underserved areas.

Tabel 3.6.1 Distribution of workforce among health centers in ordinary areas and underserved areas

Category	Sub-category	Cadre*	Total Number	% Ordinary areas	% Underserved areas
Medical Practitioners	General Practitioner	Doctors	1346	83%	17%
Nursing and Midwifery	Nursing professionals	Nurses	8718	78%	22%

Category	Sub-category	Cadre*	Total Number	% Ordinary areas	% Underserved areas
practitioners	Midwifery Professionals	Midwives	6614	79%	21%
	Food and Nutrition Professionals		819	80%	20%
	Environmental and Occupational Health Professionals		1398	70%	30%
	TOTAL		18,895	78%	22%

Source: MOH, 2006

According to the World Bank (2008), there is high inequality of health workers especially doctors between urban and rural. Urban areas in all regions consistently have more doctors per 100,000, at ratios at least five times greater than in rural and remote areas. Outside Java-Bali urban areas have the highest ratio, with 40 doctors for every 100,000 population. While the distribution of midwives between urban and rural areas in 2006, there were more midwives per 100,000 population in rural than urban areas, which might be resulted from the placement program of midwives in villages (bidan desa).

3.2.5 Distribution by occupation/cadre

Majority of the highly skilled health workers are in public sector. Estimated 60 to 70 percent of publicly employed health worker engaged in dual practice, mainly in private practice and private facilities. However, there are few sources of publicly available data that can be used to estimate the current distribution of health workers.

Table 3.7 Public/Private for profit/Faith based organization/private not for profit distribution of health workers

Category	Sub-category	Cadre*	Total Number	% Public sector	% Private sector	% Faith based organization	% Private not-for-profit
Medical Practitioners	General Practitioner		NA	NA	NA	NA	NA
	Medical Specialists		NA	NA	NA	NA	NA
	Medical Assistants		NA	NA	NA	NA	NA
Dental Practitioners	Dentists		NA	NA	NA	NA	NA
	Dental Specialists		NA	NA	NA	NA	NA
	Dental Technicians		NA	NA	NA	NA	NA
Pharmacy practitioners	Pharmacists		NA	NA	NA	NA	NA
	Pharmaceutical technicians/ assistants		NA	NA	NA	NA	NA
Nursing and Midwifery practitioners	Nursing professionals		NA	NA	NA	NA	NA
	Midwifery Professionals		NA	NA	NA	NA	NA
	Nursing- Midwifery Professionals		NA	NA	NA	NA	NA

Category	Sub-category	Cadre*	Total Number	% Public sector	% Private sector	% Faith based organization	% Private not-for-profit
	Nursing Specialists		NA	NA	NA	NA	NA
	Midwifery Specialists		NA	NA	NA	NA	NA
	Nursing Associate professionals		NA	NA	NA	NA	NA
	Midwifery Associate professionals		NA	NA	NA	NA	NA
	Nursing-Midwifery Associate professionals		NA	NA	NA	NA	NA
Non-Medical Public Health Practitioners	Public Health Generalists		NA	NA	NA	NA	NA
	Public Health Specialists		NA	NA	NA	NA	NA
	Food and Nutrition Professionals		NA	NA	NA	NA	NA
	Environmental and Occupational Health Professionals		NA	NA	NA	NA	NA
	Environment and occupational health inspectors and associates		NA	NA	NA	NA	NA
	Community Health workers		NA	NA	NA	NA	NA
	Community Health Volunteers		NA	NA	NA	NA	NA
Medical Technologists	Medical Imaging Technicians		NA	NA	NA	NA	NA
	Medical Technicians		NA	NA	NA	NA	NA
	Laboratory Assistants		NA	NA	NA	NA	NA
	Biomedical technologists		NA	NA	NA	NA	NA
Traditional Medicine Practitioner	Traditional Medicine Practitioner		NA	NA	NA	NA	NA
Veterinary practitioners	Veterinary Public Health Specialists		NA	NA	NA	NA	NA
	Veterinary technicians and assistants		NA	NA	NA	NA	NA
Other Health Workers	Optometrists		NA	NA	NA	NA	NA
	Physiotherapists		NA	NA	NA	NA	NA
	Physiotherapy Assistants		NA	NA	NA	NA	NA
	Occupational Therapists		NA	NA	NA	NA	NA
	Occupational Therapy		NA	NA	NA	NA	NA

Category	Sub-category	Cadre*	Total Number	% Public sector	% Private sector	% Faith based organization	% Private not-for-profit
	Assistant						
	Other health professionals not elsewhere classified		NA	NA	NA	NA	NA
	Other health associate professionals not elsewhere classified		NA	NA	NA	NA	NA
Health management and support staff	Health Service Manager		NA	NA	NA	NA	NA
	Medical Records Technicians		NA	NA	NA	NA	NA
	Support staff		NA	NA	NA	NA	NA
	TOTAL						

Public sector: Includes all government owned/funded health facilities under health ministry and other related ministries.

Source:

Note: * Please provide names of all cadres, additional rows may be added to accommodate all cadres under each sub-category.

4. HRH Production

4.1 Pre-service education

In general education system is under the responsibility of the Ministry of National Education (MONE) including pre-service training for health workforce. However in the technical aspects, the responsibility is shared with the MoH. Data on preservice training and production can be obtained from databases maintained by Pusdiknakes (Center for Health Workforce Education) under MoH, and the Directorate of Higher Education (Dikti) under MoNE. The Ministry of Health runs pre-service training programmes, mostly vocational education, in health manpower education institutions called Poltekkes. There are 33 Poltekkes in Indonesia distributed in almost all provinces. According to MoH data per December 2010, there are 1229 health education institutions, provided 243 majors or study programs belong to 33 Poltekkes) and 986 majors belong to other health education institutions (non-poltekkes). Please translate the axis and ordinat in English

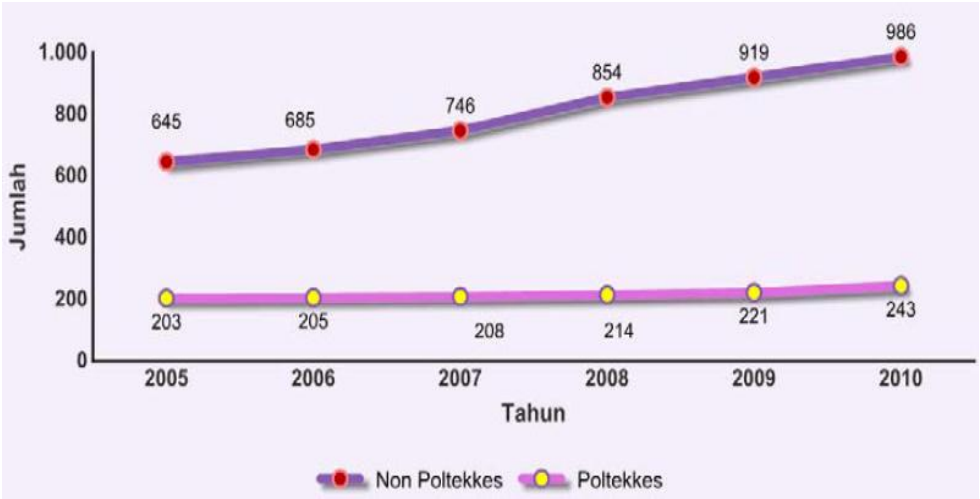


Figure 5 Trend of health majors at Poltekkes and non-poltekkes institution 2005-2010 (BDEHRH, 2010)

Based on the data above, there is an increasing number of major or study program at Poltekkes and at non Poltekkes. The MONE reported a more drastically increase of the trend of health majors in the education institutions. In year 2004 there were 1010 majors in health in Indonesia and continued increasing up to 2043 majors in health by year 2009. However, health education still faced some challenges in order to produce qualified health workforce that meet to the demand. The education framework need to be re-arranged as there is still mismatch between supply and demand. The MOH estimated that there has been temporary surplus of nurses, as the annual production is higher than the real need and the available job market. Access and distribution is also an important issue, as most of health education institutions are available in big cities and big provinces. Other challenges that must be addressed are asset management, quality control system and interprofessional collaboration. Please elaborate more on Medical, Dental, Pharmaceutical and Public Health Schools.

Comment [s12]: deleted

Comment [s13]: study programs

Comment [s14]: study programs

Table 4.1 Number of Training Institutions by type of ownership

Type of training institution	Type of ownership			Total
	Public	Private not for profit, FBOs	Private for Profit	
Medicine	30	39	NA	69
Dentistry	14	11	NA	25
Pharmacy	NA	NA	NA	NA
Nursing	53	587	NA	640
Midwifery	326	105	NA	431
Health sciences	NA	NA	NA	NA
Public health	NA	NA	NA	NA
Medical technology	NA	NA	NA	NA
Traditional Medicine	NA	NA	NA	NA
Other Allied Health (indicate the type of cadre)	NA	NA	NA	NA
TOTAL	423	742	NA	1165

FBO=Faith based Organization

Public = All government owned/funded training institutes under health, education and other related ministries.

Source: MONE 2011 (collected from EPSBED, 2010)

The following table 4.2 shows the number of students and the number of graduates of health education institutions. The data of medical practitioners, dentists and public health were collected from the Ministry of Education, while the data of other type of health workers were collected from the Ministry of Health, mostly the resource came from Poltekkes and Non Poltekkes (Diploma 3 level of education).

Table 4.2 Number of entrants and graduates by year 2010

Category	Sub-category	Number of Entrants YEAR 2009/2010	Number of graduates		Total output
			YR 2008	YR 2009	
Medical Practitioners	General Practitioner	36,500 **)	4325 *)	NA	4325
	Medical Assistants	NA	NA	NA	NA
Dental Practitioners	Dentists	10,693**)	1060*)	NA	1060
	Dental Technicians	4360	936	855	1791
Pharmacy practitioners	Pharmacists	27,766 **)	406 *)		406
	Pharmaceutical technicians/ assistants	10.895	1880	1721	3601
Nursing and	Nursing professionals	112,458	25517	27909	53424

Category	Sub-category	Number of Entrants YEAR 2009/2010	Number of graduates		Total output
			YR 2008	YR 2009	
Midwifery practitioners	Midwifery Professionals	97,663	9131	18545	27676
	Nursing- Midwifery Professionals	NA	NA	NA	NA
	Nursing Associate professionals	NA	NA	NA	NA
	Midwifery Associate professionals	NA	NA	NA	NA
	Nursing-Midwifery Associate professionals	NA	NA	NA	NA
Non-Medical Public Health Practitioners	Public Health Generalists	41435 **)	26,636 *)	NA	NA
	Food and Nutrition Professionals	7603	2039	1812	3851
	Environmental and Occupational Health Professionals	8810	1920	1735	3655
	Environmental and occupational health inspectors and associates	NA	NA	NA	NA
	Community Health workers	NA	NA	NA	NA
	Community Health Volunteers	NA	NA	NA	NA
Medical Technologists	Medical Imaging Technicians	NA	NA	NA	NA
	Medical Technicians	9458	1782	1810	3592
	Laboratory Assistants	8370	1919	1709	3628
	Biomedical technologists	NA	NA	NA	NA
Optometrists	Optometrists	NA	NA	NA	NA
Physio- and Occupational Therapists	Physiotherapists	4202	898	650	1548
	Physiotherapy Assistants	NA	NA	NA	NA
	Occupational Therapists	NA	NA	NA	NA
	Occupational Therapy Assistant	NA	NA	NA	NA
Traditional Medicine Practitioner	Traditional Medicine Practitioner	NA	NA	NA	NA

Category	Sub-category	Number of Entrants YEAR 2009/2010	Number of graduates		Total output
			YR 2008	YR 2009	
Veterinary practitioners	Veterinary Public Health Specialists	NA	NA	NA	NA
	Veterinary technicians and assistants	NA	NA	NA	NA
Other Health Workers	Optometrists	NA	NA	NA	NA
	Physiotherapists	NA	NA	NA	NA
	Physiotherapy Assistants	NA	NA	NA	NA
	Occupational Therapists	NA	NA	NA	NA
	Occupational Therapy Assistant	NA	NA	NA	NA
	Other health professionals not elsewhere classified	NA	NA	NA	NA
	Other health associate professionals not elsewhere classified	NA	NA	NA	NA
Health management and support staff	Health Service Manager	NA	NA	NA	NA
	Medical Records Technicians	NA	NA	NA	NA
	Support staff	NA	NA	NA	NA
TOTAL		327,894	51,813	56,746	108,557

Source: *) MONE 2008, **)MONE 2010, other sources from MOH year 2009 and 2010.

The capacity to produce health professionals in Indonesia was heavily impacted by growing number of health institution, particularly for nursing and midwifery. Higher production of nurses can lead this country to send nurses overseas.

There is no data available for the total number of teachers for each type of training and the ratio between teachers and students. The data from MOH year 2010 only describe the availability teachers by level of education (from Diploma 3 level up to Doctoral degree level) and their professions in health or not in health disciplines. According to that data, the total number of teachers with various educational background in health was 3.532 teachers in health disciplines and 4.126 teachers in non health disciplines.

Table 4.3 Number of teachers by profession and teachers/student ratios

Type of training institution	Total teachers	Teachers' profession		Total students	Teachers/ student ratios
		Professionals within the discipline	Professionals outside the discipline		
Medicine	NA	NA	NA	NA	NA

Dentistry	NA	NA	NA	NA	NA
Pharmacy	NA	NA	NA	NA	NA
Nursing & Midwifery*	NA	NA	NA	NA	NA
Health sciences	NA	NA	NA	NA	NA
Public health	NA	NA	NA	NA	NA
Medical technology	NA	NA	NA	NA	NA
Traditional Medicine	NA	NA	NA	NA	NA
Other Allied Health (indicate the type of cadre)	NA	NA	NA	NA	NA
TOTAL	NA	NA	NA	NA	NA

Note: * to report midwifery separately if midwifery programme is not an integral part of the nursing programme and there is a separate midwifery school for this purpose.

To ensure the quality of education, the education institutions must be accredited. The accreditation of non-poltekkes institution is undertaken by BAN-PT (The National Accreditation Body for Higher Education). While accreditation of Poltekkes undertaken by Center for Health Workforce Education (Pusdiknakes) under MoH. In the near future accreditation of all education institutions will be conducted by BAN-PY only. BAN-PT is supposed to accredit public and private institution with 3 years education and above. The accreditation process also involved The Association of Medical Education Institutions (AIPKI), IBI, PPNI and others professional association. Both Pusdiknakes and BAN-PT are currently working to improve accreditation procedures.

4.2 In-service and continuing education

The MoH recognizes the importance of staff development and skills updates for its staff in its HRH policy. Under supervision of the Board for Development and Empowerment of Human Resources for Health, there are centers to provide the in-service training of health workforce, training for health apparatus (civil servants) and continuing professional development (CPD). The trainings provided include technical and clinical trainings, management and leadership training and professional trainings with credit points.

Health professional associations such as medical associations, nurse associations, midwife associantions and others were encouraged to conduct regular CPD for their members in order to attain minimum credit points required for their certification and licensing as professionals. Indonesian Medical Council (KKI) as an actualization of Medical Practice Law no. 29 year 2004 also has functions to supervise and to improve the quality of medical practices through continuing professional development.

4.3 Health workforce requirements

Acknowledging that the critical shortage of health workers and the huge disparity between regions are major causes of health inequity, Indonesia has planned a scale-up for the expansion of health services, including a strategic plan for the development of an adequate health workforce. The plan recognizes the number of persons and types required in view of the various health needs and determinants. To this effect, a feasible health workforce planning model is being utilized. The method used is The method used was the ratio of health workers to the certain value i.e. the health status measured by the life expectancy target..

Comment [s15]: deleted

Comment [s16]: please explain, whether all categories using the same method?

Table 4.4 Projections for health workforce requirements for the coming years

Category	Sub-category	Cadre*	2014	2019	2025
Medical Practitioners	General Practitioner		117,808	248,627	306,490
	Medical Specialists		29,452	62,157	76,622
Dental Practitioners	Dentists		26,998	28,489	30,102
	Dental Technicians	Dental nurses	39,269	41,438	43,784
Pharmacy practitioners	Pharmacists		29,452	62,157	76,622
	Pharmaceutical technicians/ assistants		58,904	124,314	153,245
Nursing and Midwifery practitioners	Nursing professionals		387,785	409,199	432,369
	Midwifery Professionals		184,075	194,240	205,239
Non-Medical Public Health Practitioners	Public Health Generalists		29,452	62,157	76,622
	Environmental and Occupational Health Professionals	Sanitarian	36,815	77,696	95,778
	Medical Technicians		22,089	46,618	57,467
	Physiotherapists		14,726	31,078	38,311
	Other health professionals not elsewhere classified	Nutritionist	58,904	124,314	153,245

Category	Sub-category	Cadre*	2014	2019	2025
TOTAL			1,035,729	1,512,484	1,745,896

Source: BDEHRH, 2010

Life expectancy target year 2014: 72 year; Life expectancy target year 2019: 73,1 years; Life expectancy target year 2025: 73,7 years

5. HRH Utilization

5.1 Recruitment

Recruitment and selection is a chain of process in searching for personnel to enter a particular job or position to increase the number of personnel or to substitute the loss of personnel (as part of the zero growth formation policy). The following methods are for recruitment and selection of health personnel:

a) Permanent Civil Servant (PNS)
   There are various actors in recruitment and selection of PNS. The vacancy quota for PNS, or known as "formasi PNS" is determined by Ministry for The Empowerment of State Apparatus (MENPAN) in relation to the availability of the state budget allocated by the Ministry of Finance (MoF). The overall process of recruitment and selection is conducted at each central units (for central PNS) and at each local government levels coordinated by BKD. The result of selection will be then finalized for administration purpose by the National Civil Servant Agency (BKN).
b) Local contract.
   The local governments (province and district level) could use their own resources to contract more local personnel. Nevertheless, since year 2005 the central government had prohibited local governments to contract new personnel. All contract personnel who were recruited before year 2005 and met the criteria are gradually employed as PNS.
c) Central Contract (PTT/Pegawai tidak Tetap).
   Exception was given to contract medical staffs and midwives under PTT scheme. Recruitment and selection is conducted centrally by the MOH. The vacancy quota is also determined by The MoH based on the proposal from province health offices.
d) Special assignment
   MOH also have contract mechanism to obtain other category of strategic health personnel who can not be recruited under PTT scheme, such as senior residents (medical doctors who are in the final stage of specialist training), nurses, sanitarians, nutritionist and other urgently required health professionals. The duration of the contract ranges from 3 months to one year. Priority placement was located in very remote, borderline areas and the outer small islands that are considered as severe underserved areas. This is particularly to help districts with less financial capacity or do not produce certain type of health professional, to fill in the vacant post of health personnel in the underserved areas.

Under the law number 8 year 1961 health workforce has to serve at least three years in the government facilities (Compulsory service). Followed by the government regulation number 1 year 1988, maximum length of services is 5 years. This regulation applies to doctors and dentists who are required to work in the health centre which belongs to government, private, university and military. This program became a controversy for a long period as considered an infringement of human rights. As an attempt to bring equality and improvement of health services, the issuance of President decree No. 37 year 1991 marked the implementation of a new policy namely contracted staff (PTT). This regulation obliged doctors to work as temporary staffs. Almost at the same time, using a similar scheme, the government assigned midwives in rural areas through the village midwife program.

5.2 Deployment and distribution mechanisms

Deployment and distribution mechanism were controlled by central and local government. At the central level, the MOH has established CPMHRH to oversee the distribution of health professionals based on recruitment plans and available staff. However, for deployment and distribution of civil servants, the control is mainly held by the Ministry of State Apparatus at the central level and the Local Personnel Agency (BKD) at the province and district levels.

As shown in a study carried out by the World Bank in January 2009, the distribution of health facility and personnel imbalance between rural and urban. Unequal placement and distribution have attained more attention from the Government by sending health personnel through various mechanism. Civil servant scheme and contractual employee have been implemented to tackle this situation. The imbalance distribution, deployment and composition of the health workforce is an obstacle to the effectiveness of the country's core health systems and services.

The PTT program is managed by the Personnel Bureau of MoH, in collaboration with the Provincial Health Office (PHO) and the DHO. The need of doctors or midwives PTT is determined and proposed by the districts through the province level. The Personnel Bureau deal with recruitment, deployment and distribution of the PTTs up to the province level, then the province continue distributing them to the district level who will assign the PTTs to the location in need. The role of CPHRM was to provide data on the heath workers requirement and plan for distribution.

The distribution of other health workers through the special assignment is also conducted by CPMHRH in collaboration with the province level and medical schools. To attract more interest for health workers to work in remote and underserved areas, MoH provided financial incentives using the national budget and encouraged the local governments to provide other additional incentives.

5.3 The work environment

To attract more health workers serving the remote and very remote areas, since May 2006 the MoH RI have introduced new policies i.e. shortening service period and higher financial incentive for the PTT medical specialist, doctors, dentists and midwives. The minimum service for PTT doctors and dentists in very remote areas is 6 months while in remote areas is 1 year. The financial incentive is only given to those working in very remote areas and arranged as follow (7,5% income tax included):

- Medical Specialist : Rp 7. 500.000,00/month (USD 824)
- Doctor/dentist : Rp 5. 000.000,00/month (USD 549)
- Midwife : Rp 2. 500.000,00/month (USD 275)

These policies are applied evenly to all PTT workers in very remote areas regardless various geographic barriers, availability of supporting facilities and other factors. The MoH encourage the local government to provide other facilities using the local budget such as vehicles, housing, telecommunication equipment and electricity.

Most of health workers in the public health facilities were employed by the local government. Although the main salary and leave entitlements have been determined by the central level, it is the responsibility of the local government to provide additional incentive, scholarship to continue to higher education and other facilities including safety at workplace.

5.4 Employment of health workers in the private sector

An estimated 60 to 70 percent of health service providers who are publicly employed have second jobs or operate a private practice after hours (World Bank, 2009). The number estimated will be increased as private sector offer higher salary and facility than public sector. The opening of the health sector to foreign investment also increase the number of private health providers in the future.

6. Governance for HRH

6.1 HRH policies and plans

The Board of Development and Empowerment of Human Resources for Health have a main task to formulate appropriate policies that will ensure adequate production of appropriate numbers and HR personnel, equitable distribution of staff and quality improvement. The main functions of BDEHRH are:

- HRH policy, strategy and formulation
- HRH planning and distribution
- Coordination of pre-service and in-service training
- HRH monitoring and evaluation

The development of the HRH policy involved various levels and stages of consultations with stakeholders, at the national and regional levels. Such meetings provided opportunity to elicit input from various sources. The draft policy document gathered from this sources and will be discussed until the final one.

6.2 Policy development, planning and managing for HRH

Prior to decentralization, the central Ministry of Health had complete responsibility for the health sector, including human resources, and decided how resources were to be allocated in the districts. According to Heywood & Harahap (2009), in principle the districts now have control of their public sector health workforce, but in reality the central government still controls all permanent civil servants or PNS (Pegawai Negeri Sipil) working at the district level; these staff are paid directly from the centre and the centre effectively controls hiring, firing and the conditions of employment of this category of staff. The centre also controls hiring, firing and the conditions of employment of a category of contract staff known as PTT (Pegawai Tidak Tetap). The PTT scheme is applied to medical doctors, dentist and midwives, with duration of the contract ranging from 6 months to 3 years depending on the location criteria. The contract can be prolonged twice. The PTT staffs have the same level in authority, medical practices and the same training as PNS.

Implementation of the decentralization has given some impacts on health workforce issues:

a) *Transferring the employment status of civil servant from the central to the local level.* Approximately 70% of central PNS who worked in the local facilities were administratively transferred to the management of the local government. Up to year 2007, the proportion of civil servant is 71% at district level, 8% at province level and 21% at the central level (MENPAN, 2008).
b) *The local government has more autonomy in providing and managing public facilities.* The rapid formation of new provinces and districts/municipals has been followed by the increased number of health facilities particularly district hospitals and community health centres. The number of community health centres annually increases by 3% within the last five years. However, this development is not adequately followed by deploying sufficient health personnel in accordance with the national standard (DSP or Daftar Susunan Pegawai).
c) *The central level still maintain the power in contracting strategic health workers.* Under PTT scheme, recruitment and deployment of medical staffs and midwives are controlled by the MoH, the districts have responsibility to propose the required number of personnel. The districts still have authority to contract health workers using local budget, however many districts lack for fiscal capacity.
d) *The break-down of information system including the health workforce information.* The districts do not feel obliged to send the health workforce data to the upper level. Health workforce planning thus is not supported by adequate and accurate data.
e) *Rotation of health workers among the different administration regions.* Although the central level controls the system, mobility of health personnel among different regions is more restricted during the decentralization. The process of staff transfer from one region to other

region requires approval from both side local governments before agreement from the central level involving complicated bureaucracy on administration and financing.

f) *Problems on Excess vs shortage of health workers*. Restriction on mobility of civil servants and the abolition of Wajib Kerja Sarjana (a compulsory service for university fresh graduates) have caused difficulty in distribution of health personnel from health facilities with excess number of health workers to the health facilities with shortage number of health workers. Shortage of health workers is usually simply answered through proposing recruitment of new civil servants to the central level, although the vacancy quota is very much limited. On the contrary, districts or health facilities with excess number of health workers must struggle to find innovations to increase utilization of their staffs.

g) *The growing number of health workforce education institution (pre service training).* To improve recruitment and retention, many local governments open new health workforce education institutions. Two new medical schools will be opened in two provinces in the eastern Indonesia. The private sector also plays significant role, as 84% of the midwifery schools and 52% of nursing schools managed by the private. However distribution also remains the issue, as more than 50% of the schools concentrated in Java. Another issue is quality, as most of the schools also use resources (lecturers, clinical instructors and practical field) from public institution (World Bank, 2009).

h) The Kampala declaration was a momentum for the MoH to renew its commitment to improve community access to quality health services through equitably distribution of health workers in adequate number and type. The Ministry of Health continued to fight for more funding support to the House of Parliament and MOF. The proposal was then granted in year 2009 and the project was to continue with target 101 health centers in the remote, underserved, country borderline areas and small island. There were 135 health workers joined the special assignment to work in these locations. About 50% of those health workers were then employed by the local government as civil servant, while most of the remaining continued the contract under the Special Assignment.

i) It was agreed by the stakeholder that deployment and equitably distribution of health personnel becoming one of important strategies in the Mid Term National Development Plan for Health Sector year 2009-2014, with the main priority in the remote, underserved, country borderline areas and small islands. The placement of health workers for those areas were targeted at 1200 personnel by the end of year 2010.

Furthermore, to ensure that all stakeholder and especially the local government concern to this issue, the President of Indonesia issued Presidential Instruction No. 1 year 2010 on the Acceleration of the Implementation of National Development Priorities in 2010. The instruction emphasized on deployment of strategic health workers in the remote, underserved, country borderline areas and small islands. For sustainability in the future, through the Presidential Instruction No. 3 year 2010 on the Justice for All , Development for the period of year 2009-2014, one of priority activities were to conduct mapping of health workers and to increase vacancies for civil servants the remote, underserved, country borderline areas and small islands (about 50% for 5 years). The implementation of those Presidential Instructions was under close supervision of the Presidential Taskforce for the National Development (UKP4).

Indonesia has recognized the importance of coordination among stakeholder to work on health development. In September 2010, an Indonesian Country Coordination and Facilitation (CCF) on Human Resources for Health has been established by the Coordinating Minister of People Welfare as the chairman and Minister of Health as the co-chairman. CCF is the process which brings all the key stakeholders in the country to develop and implement a comprehensive HRH plan. The Committee will contribute to the continuing development of workforce and human resources strategies that support the strategic objectives and priorities that set up by government. The CCF committee is consist of professional organization, hospital association, ministry of home affairs, ministry of defence, ministry of national education, ministry of law and Human Right, ministry of foreign affairs, ministry of social, ministry of religious affairs, ministry of finance, ministry of administrative reforms, ministry of manpower and transmigration, ministry of Accelerated Development of Disadvantaged Regions, National Development Planning Agency, Indonesian national police, Indonesian national armed forces,

Indonesian State Board of Administration Office, *Indonesian* population and family information network, national agency of drug and food control, education association, and The Indonesian medical council.

One of the top work priorities to be conducted by the Indonesian CCF is the development of HRH plan and costed plan for year 2011- 2025 with close involvement of various stakeholder. The HRH plan is expected to be finalized by the end of this year. The HRH Policy and Plans also respond to the human capacity requirement of priority international agenda and goals such as the Millennium Development Goals and the Global Health Interventions for HIV/AIDS, Tuberculosis and Malaria Control.

6.3 Professional Regulation

Professional regulation undertaken by Indonesian Medical Council for doctor which was authorized to require the registration of all medical doctors before licensing. With Law No. 29/2004 on Medical Practice, the Indonesian Medical Council (KKI) was created and charged with curriculum development and the registration and certification of graduates. The law states that KKI has three functions; (i) to register doctors and dentists, (ii) establish medical education standards for health professionals and (iii) to supervise and improve the quality of medical practices.
Currently the Indonesian Health Manpower Council (MTKI) was established and will be followed by establishment of the similar councils at the province level. This council also has the function to control the quality of health workforce other than medical practitioners and dentists through registration, certification and licensing.

6.4 HRH information

At the central level, MOH have the National Strategic Plan year 2010- 2014 that contain all strategic programs including HRH development. It has been translated into an action plan for development and empowerment of HRH with clear and specific indicators to achieve.

The health information system has been build by the Center for Data and Information of MOH to collect all health related data including HRH from the other internal units of MoH and from the local health offices.

To collect complete HRH data and information, a comprehensive information system to cover both public and private sector is required including the reporting system from the district to province and to the central level. The first mapping of HRH data was conducted last year to collect the baseline data on HRH. The primary data collection was conducted by sending a specific format on paper and CDs to the local level. The provision of CDs was expected to help the data entry easier. The format of data collection included number of health workers by category, working unit, and the estimated requirement of health workers. However the reporting back from the local level is still below the target, and most of the report only covers data from public facilities. It is expected that the updated of the HRH data will be conducted annually.

BDEHRH also produced the annual HRH data profile but it is still very limited to health institutions owned by the government and especially which have direct supervision from the MoH. Other data was collected from various sources such as BPS, MONE and other stakeholders. Some efforts have been done to collect data from the private sector. So far only certain private hospitals sent report on the health workers existing data and the estimation of health workers requirement.

6.5 HRH research

There are very few uncoordinated HRH- specific research programmes being carried out in the country. Some few researches carried out in recent times include: incentive for doctor in rural and remote area. Though there is local capacity for determining HRH priorities and conducting relevant

researches, funding poses a major challenge. Research findings are seldom used to improve the HRH systems and processes.

6.6 Stakeholders in HRH

The following are the national and international stakeholders in HRH and their respective roles.

Stakeholders in HRH	Roles
BDEHRH MoH	HRH Policy Formulation, Strategic Planning, Recruitment, Resource Mobilisation and allocation, Deployment, Utilisation, Pre-Service Training, Monitoring and Evaluation
Universities and other Health Training Institutions	Training, Research
The Board of National Development	Setting the National Development and HR Agenda
Professional Regulatory Bodies	Accrediting Training Institutions, setting standards for practice, Monitoring, examination, licensing and registration
Parliament	Passage of relevant bills on HRH into law. Approval of health sector budget including personnel emoluments
Professional Associations including: IDI, PPNI, IBI, IAKMI	Continuing professional Development of Members
National Accreditation Board	Inspection and accreditation of training institutions
Ministry of Education	Training and accreditation
MENPAN	Allocation and formation for civil servant in health sector
Ministry of Finance	Release of financial clearance for recruitment of new Entrants
World Health Organisation Global Health workforce Alliance Asia Pacific Action Alliance of HRH	Determining global HRH priorities, training, technical support Assisting the development and planning of HRH
USAID JICA AUSAID World Bank	Training, Technical Assistance, performance management
Non governmental organizations in health	Training

Annex 1: Classification of health workforce of the WHO South-East Asia Region

The health workforce of the WHO South-East Asia Region is grouped into the following 10 categories:

1. Medical practitioners
Includes general practitioners, medical specialists and medical assistants.

2. Dental practitioners
Includes dentists, dental specialists and dental technicians (e.g. dental assistants, dental hygienists, dental nurses).

3. Pharmacy practitioners
Includes pharmacists, pharmaceutical technicians/assistants (e.g. pharmacy assistants, pharmaceutical technicians).

4. Nursing and midwifery practitioners
Includes nursing professionals, midwifery professionals, nursing-midwifery professionals, nursing specialists, midwifery specialists, nursing associate professionals (e.g. public health midwives, community midwives, assistant midwives, community-based skilled birth attendants), and nursing-midwifery associate professionals (e.g. auxiliary nurse-midwives).

5. Non-medical public health practitioners
Includes public health generalists, public health, specialists, food and nutrition professionals (e.g. nutritionists, food science specialist, dieticians), environmental and occupational health professions (e.g. environmental health officer, sanitarians, occupational health officers), environmental and occupational health inspectors and associates (e.g. public health inspectors, food inspectors), community health workers (e.g. basic health workers, family welfare assistants, family welfare visitors, health assistants, lady health visitors), and community health volunteers.

6. Medical technologists
Includes medical imaging technicians (e.g. radiographers, mammographers), medical technicians (e.g. medical laboratory technicians, blood bank technicians), laboratory assistants (e.g. medical laboratory assistants, assistant radiographers, assistant blood bank technician), and biomedical technologists (e.g. medical equipment technicians, medical equipment engineers, biomedical technologist, biomedical engineers).

7. Traditional medicine practitioners
Includes traditional medicine practitioners (e.g. Ayurvedic Practitioner, Homeopath, Koryo Medicine Practitioners, Unani Practitioners.

8. Veterinarian practitioners (working for human health aspects)
Includes veterinary public health specialists, and veterinary technicians.

9. Other health workers
Includes a large number of health workers such as optometrists, physiotherapists, physiotherapy assistants, occupational therapists, occupational therapy assistant, and other health professional and health associate professionals not elsewhere classified.

10. Health management and support staff

Includes a large number of non-health professional workers such as health service managers, medical records technicians, health statisticians, clerical, accounting and other general support staff (e.g. ward clerks, medical secretary, medical store keepers).

Annex 2: Health workforce classification mapping of the WHO South-East Asia Region

(Note: Code for each sub-category as per International Standard Classification of Occupations' code)

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
Medical Practitioners	General Practitioner (2211)	Professionals with minimum of 4 years of university education in the field of medicine with minimum of 1 year internship.	Preventing, diagnosing, caring for and treating illness, disease and injury in humans and the maintenance of general health. They do not limit their practice to certain disease categories or methods of treatment, and may assume responsibility for the provision of continuing and comprehensive medical care. They may supervise the implementation of care and treatment plans by other health care providers, and conduct medical education and research activities.	General Medical Practitioners, Medical Doctors, Physicians.
	Medical Specialists (2212)	Medical doctors with minimum of 1 year of postgraduate education/ training. They are recognized as specialists by a national regulatory body(such as medical council).	Preventing, diagnosing, caring for and treating illness, disease and injury in humans using specialised testing, diagnostic, medical, surgical, physical and psychological techniques. They specialise in certain disease categories, types of patient or methods of treatment, and may conduct medical education and research activities in their chosen areas of specialisation. They may supervise the implementation of care and treatment plans by other health care providers.	Anesthesiologists, Cardiologists, Community medicine specialists, Critical care medicine specialists, Dermatologists, Emergency medicine specialists, Endocrinologists, Family medicine physicians/ specialists, Gastroenterologists, Geriatric medicine specialists, Haematologists, Hepatologists, Infectious disease specialists, Medical examiners, Medical oncologists, Neonatologists, Nephrologists, Neurologists, Nuclear medicine specialists, Obstetric-Gynecologists, Occupational medicine specialists, Orthopedic surgeons, Otolaryngologists (ear, nose, and throat specialists), Pathologist, Pediatrician, Perinatologist, Preventive and social medicine/Public health specialists,

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
				Psychiatrists, Radiation oncologists, Radiologists, Rheumatologists, Sports medicine specialists, Surgeons, Urologists.
	Medical Assistants (3256)	Assistants to the medical doctors with minimum of 3 years of accredited education/training in medical assistant.	Perform basic clinical and administrative tasks to support patient care under the direct supervision of, or as per plan, practices and procedures established by a medical practitioner or other health professional.	Medical Assistants.
Dental Practitioners	Dentists (2261)	Professionals with minimum of 4 years of accredited university education leading to a dentistry degree.	Diagnosing, treating and preventing diseases, injuries and abnormalities of the teeth, mouth, jaws and associated tissues to promote and restore oral health.	Dentists.
	Dental Specialists (2261)	Dentist with accredited post-graduate degree in dental specialty. They are recognized as specialists by a national regulatory body (such as dental council).	Diagnosing, treating and preventing diseases, injuries and abnormalities of the teeth, mouth, jaws and associated tissueswhere the complexity of a condition requires specialised diagnostic, surgical and other techniques to promote and restore oral health. They usually practise in their specialized field only.	Endodontists, Oral and maxillo-facial surgeons, Orthodontists, Paedodontists, Periodontists, Prosthodontists.
	Dental Technicians (3251)	Assistants to dentists with minimum of 1 year of training in dental skills.	Provide basic dental care services for the prevention and treatment of diseases and disorders of the teeth and mouth, as per care plans and procedures established by a dentist or other oral health professional.	Dental Assistants, Dental Hygienists, Dental Nurses.
Pharmacy practitioners	Pharmacists (2262)	Professionals with minimum of 4 years university education in pharmacy and internship.	Store, preserve, compound, test and dispense medicinal products. They counsel on the proper use and adverse effects of drugs and medicines following prescriptions issued by medical doctors and other health professionals. They contribute to researching, preparing, prescribing and monitoring medicinal therapies for optimising human health.	Pharmacists.
	Pharmaceutical technicians/assistants	Assistants to pharmacists with minimum of 1 year of accredited education in pharmacy assistant or	Perform routine tasks associated with preparing and dispensing medicinal products under the supervision of a pharmacist or other health professional.	Pharmacy Assistants, Pharmaceutical Technicians

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
	(3213)	technician.		
Nursing and Midwifery practitioners	Nursing professionals (2221)	Professionals with minimum of 3 years of accredited education in the field of nursing.	Plan, manage, provide and evaluate nursing care services for persons in need of such care due to effects of illness, injury, or other physical or mental impairment, or potential risks for health. They work autonomously or in teams with medical doctors and other health workers. They may supervise the implementation of nursing care plans, and conduct nursing education activities.	Professional Nurses, Staff Nurses, Public Health Nurses, Community Health Nurses.
	Midwifery Professionals (2222)	Professionals with minimum of 3 years of accredited education in the field of midwifery.	Plan, manage, provide and evaluate midwifery care services before, during and after pregnancy and childbirth and newborn care. They provide normal delivery care for reducing health risks to women and newborns, working autonomously or in teams with other health care providers. They may supervise the implementation of midwifery care plans, and conduct midwifery education activities.	Professional Midwives.
	Nursing- Midwifery Professionals (2221 & 2222)	Professionals with minimum of 3 years of accredited education in the field of nursing and midwifery **or** nursing professionals having 6 months - 1 year of accredited post-basic education in the field of midwifery.	Plan, manage, provide and evaluate (1) nursing care services for persons in need of such care due to effects of illness, injury, or other physical or mental impairment, or potential risks for health and (2) midwifery care services before, during and after pregnancy and childbirth, including normal delivery, and newborn care. They work autonomously or in teams with medical doctors and other health workers. They may supervise the implementation of nursing-midwifery care plans, and conduct nursing-midwifery education activities.	General Nurse-Midwives, Professional Nurse-Midwives.
	Nursing Specialists (2221)	Nursing Professionals with minimum of 1 year of accredited post-basic training/education in any specialty in nursing (e.g. pediatric, neonatal, cardiac nursing, etc). They are recognized as specialists by a national regulatory body (such as	Plan, manage, provide and evaluate specialized nursing care services for persons in need of such care due to effects of illness, injury, or other physical or mental impairment, or potential risks for health. They specialise in certain nursing specialty and may conduct nursing education and research activities in their chosen areas of specialisation. They work autonomously or in teams with medical doctors and other health workers. They may conduct midwifery education activities and provide consultation to other	Clinical Nurse Specialists, Advanced Practice Nurses, Nurse Practitioners.

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
		nursing council).	nursing practitioners.	
	Midwifery Specialists (2222)	Midwifery Professionals with minimum of 1 year of accredited post-basic training/education in advanced midwifery. They are recognized as specialists by a national regulatory body (such as midwifery council or nursing and midwifery council).	Plan, manage, provide and evaluate midwifery care services before, during and after pregnancy and childbirth and newborn care where complexity of conditions/situations required advanced knowledge and skills in midwifery. They provide normal delivery care as well as perform selected life-saving interventions for reducing health risks to women and newborns, working autonomously or in teams with other health care providers. They may conduct education and research activities in midwifery and provide consultation to other midwifery practitioners.	Advanced Practice Midwives, Midwife Practitioners.
	Nursing Associate professionals (3221)	Practitioners with minimum of 18 months of accredited education in the field of nursing.	Provide basic nursing care for people who are in need of such care due to effects of illness, injury, or other physical or mental impairment. They implement care and referral plans as per plans, practice and procedures established by nursing and other health professionals.	Practical Nurses.
		Practitioners with 6 months - 1 year of education/training in the field of nursing.	Assist in providing routine patient care services as per care plans, practices and procedures established by nursing and other health professionals.	Assistant Nurses, Nurse Aids.
	Midwifery Associate professionals (3222)	Practitioners with 18 months – 2 years of accredited education in the field of midwifery.	Provide basic midwifery care and advise before, during and after pregnancy and childbirth and newborn care. They implement care and referral plans, including normal delivery, to reduce health risks to women and newborns as per plans, practice and procedures established by midwifery and other health professionals.	Public Health Midwives, Community Midwives.
		Practitioners with 6 months of accredited midwifery education.	Assist in providing basic midwifery care and advise before, during and after pregnancy and childbirth and newborn care. They implement careand referral plans,including assisting in normal delivery, to reduce health risks to women and newborns as per plans, practice and procedures established by midwifery and other health professionals.	Assistant Midwives, Community-based Skilled Birth Attendants.
	Nursing-Midwifery	Practitioners with minimum of 18	Provide basic nursing care for people who are in need of such care due to effects of	Auxiliary Nurse-Midwives.

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
	Associate professionals (3221 & 3222)	months of accredited education in the field of nursing and midwifery.	illness, injury, or other physical or mental impairment as well as provide basic midwifery care and advise before, during and after pregnancy and childbirth, including normal delivery, and newborn care. They implement care and referral plans as per plans, practice and procedures established by nursing, midwifery and other health professionals.	
Non-Medical Public Health Practitioners	Public Health Generalists (2263)	Non-medical professionals with university education in public health bachelor's degree.	Plan, manage, provide and evaluate basic public health services for disease prevention and promotion of population health. They manage environments to reduce health risks of the community.	Public Health Officer, Public Health Technical Officer.
	Public Health Specialists (2263)	Non-medical public health professionals with post-graduate degree in public health specialties (e.g. epidemiology, entomology, health economics, health statistics, health education etc).	Plan, manage, provide and evaluate specialized public health interventions in their area of specialization for disease prevention, promotion of population health, and minimize health risks of the community.	Epidemiologists, Health Educators, Health Promotion Officer/specialists, Biostatisticians.
	Food and Nutrition Professionals (2265)	Professionals with minimum of 3 years of university education in nutrition/dietetics.	Plan, manage, provide and evaluate various dietary interventions, clinical and/or public health nutrition programmes, food safety, food technology or food toxicology programmes.	Nutritionists, Food Science specialists, Dieticians.
	Environmental and Occupational Health Professionals (2263)	Professionals with minimum of 3 years of university education in environmental and/or occupational health.	Plan, assess and investigate the implementation of programs and regulations to monitor and control environmental factors that can potentially affect human health, to ensure safe and healthy working conditions, and to ensure the safety of processes for the production of goods and services.	Environmental Health Officer, Sanitarians, Occupational Health officer.
	Environment and occupational health inspectors and associates (3257)	Practitioners with minimum of 2 years training in public health or related fields.	Plan, assess and investigate the implementation of programmes and regulations to monitor and control environmental factors that can potentially affect water, sanitation, food hygiene, food safety; and carry out disease investigation and prevention.	Public Health Inspectors, Food inspectors.

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
	Community Health workers (3253)	Practitioners, not elsewhere classified, work at the district level and below in the health system with formal education of 6-18 months.	Provide health education, referral and follow-up, case management, and basic preventive health care and home visiting services to specific communities. They provide support and assistance to individuals and families in navigating the health and social services system.	Family Welfare Assistants, Family Welfare Visitors, Lady Health Visitors, Health Assistants, Basic Health Workers,
	Community Health Volunteers (3253)	People chosen by the community and trained to deal with health problems of individuals and the community.	Provide health education and assist individuals, families in the communities accessing health care services.	Community health volunteers, Public Health Communicators, Public Health Volunteers, Village Health Volunteers.
Medical Technologists	Medical Imaging Technicians (3211)	Practitioners with minimum of 2 years of education in medical technology, radiology or a related field.	Test and operate radiographic, ultrasound and other medical imaging equipment to produce images of body structures for the diagnosis and treatment of injury, disease and other impairments.	Radiographers, Mammographers.
	Medical Technicians (3212)	Practitioners with minimum of 2 years of accredited education/training in medical technology or related field.	Perform tests on environmental and human specimens of body fluids and tissues in order to get information about the disease epidemiology and / or health of a patient or cause of disease/death.	Medical Laboratory Technicians, Blood Bank Technicians.
	Laboratory Assistants (3212)	Assistants to medical technicians with minimum of 1 year of accredited training in any health technicians' course. (e.g. laboratory, radiology, etc.).	Assist in non-invasive diagnostic/screening procedures (radiographic, ultrasound, other imaging procedures) or perform/assist in conduct of tests on environmental and human specimens of body fluids and tissues in order to get information about the disease epidemiology and / or health of a patient or cause of disease/death as per plan, practices and procedures established by medical technology and other health professionals.	Medical Laboratory Assistants, Assistant Radiographers, Assistant Blood Bank Technician
	Biomedical technologists (3211)	Practitioners with minimum of 2 years of education in the field of bio-medical engineering or a related field.	Service, maintainand repair radiographic, ultrasound, laboratory and other medical equipment.	Medical Equipment Technicians, Medical Equipment Engineers, Biomedical technologist, Biomedical Engineers.
Traditional Medicine	Traditional Medicine Practitioners	Practitioners recognized in indigenous system of medicine	Apply procedures and practices based on the theories, beliefs and experiences indigenous to different cultures, used in the maintenance of health and in the prevention	Ayurvedic Practitioners, Unani Practitioners, Homeopath,

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
Practitioner	(2230)	(Homeopathic/ Oriental Medicine /Complementary Medicine) with minimum of 4 years education leading to a degree + 1 year internship	or treatment of physical and mental illnesses.	Koryomedicine practitioners.
Veterinary practitioners (working for human health aspects)	Veterinary Public Health Specialists (2250)	Veterinary doctors (professionals with at least 4.5 years of university education in the field of veterinary medicine + internship) with minimum 1 year of post-graduate education on epidemiology/ veterinary public health.	Preventing, diagnosingand controlling zoonoses, food borne illnesses and intoxications. Providing expert opinion as a team member in outbreak investigation of emerging diseases/zoonoses at the human animal interface. They may assume responsibility for food safety.	Veterinary Public Health Specialists, Veterinary Epidemiologists.
	Veterinary technicians and assistants (3240)	Assistants to veterinarians with minimum 1 year of education in animal science.	Assist inperforming basic veterinary tasks to support laboratory animal management and zoonoses control under the direct supervision of, or as per plan, practices and procedures established by a veterinary doctor or other health professional.	Veterinary Technicians, Veterinary Assistants
Other Health Workers	Optometrists (2267)	Practitioners with minimum of 2 years education in the field of optometry	Provide primary eye health and vision care services. They provide diagnosis management and treatment services for disorders of the eyes and visual system. Dispensing opticians design, fit and dispense optical lenses for the correction of reduced visual acuity.	Optometrists, Ophthalmic Technicians.
	Physiotherapists (2264)	Practitioners with minimum of 2 years of education in physiotherapy.	Provide physical therapeutic treatments to patients in circumstances where functional movement is threatened by injury, disease or impairment. They may apply movement, ultrasound, heating, laser and other techniques.	Physiotherapists, Physical Therapists.
	Physiotherapy Assistants (3255)	Assistants to physiotherapists with minimum of 1 year of education in physiotherapy.	Provide basic physical therapeutic treatments to patients as per plan, practices and procedures established by physiotherapy and other health professionals	Physiotherapy Assistants.
	Occupational	Practitioners with minimum of 2	Provide occupational therapeutic treatments to patients to improve their ability to	Occupational Therapists.

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
	Therapists (2269)	years of education in occupational therapy.	perform tasks in their daily living and working environments. They work with individuals who have conditions that are mentally, physically, developmentally, socially or emotionally disabling. They also help them to develop, recover, or maintain daily living and work skills.	
	Occupational Therapy Assistant (2269)	Assistants to occupational therapists with minimum of 1 year of education in occupational therapy.	Provide basic occupational therapeutic treatments to patients as per plan, practices and procedures established by occupational therapy and other health professionals.	Occupational Therapy Assistant.
	Other health professionals not elsewhere classified (2269)	To be defined by countries as per country context.	To be defined by countries as per country context.	To be defined by countries as per country context.
	Other health associate professionals not elsewhere classified (3259)	To be defined by countries as per country context.	To be defined by countries as per country context.	To be defined by countries as per country context.
Health management and support staff	Health Service Manager (1342)	Non-medical professionals with minimum of 2 years education in health service management.	Plan, coordinate and supervise the provision of clinical, personal care and community health care services.	District Health Officer.
	Medical Records Technicians (3252)	Practitioners with minimum of 1 year of education in health information and/or medical records.	Assess, manage and implement health records processing, storage and retrieval systems in medical facilities and other health care settings to meet the legal, professional, ethical and administrative records-keeping requirements of health services delivery.	Medical Records Technicians, Health Statisticians.
	Support staff	Clerical, accounting, and other support staff.	This category may include a wide range of occupations connected with health service provision.	Ward Clerks, Medical Secretary, Medical Store Keeper.

Annex 3: Health workforce classification mapping of Indonesia

(Note: Code for each sub-category as per International Standard Classification of Occupations' code)

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
Medical Practitioners	General Practitioner (2211)	Professionals with minimum of 4 years of university education in the field of medicine with minimum of 1 year internship.	Preventing, diagnosing, caring for and treating illness, disease and injury in humans and the maintenance of general health. They do not limit their practice to certain disease categories or methods of treatment, and may assume responsibility for the provision of continuing and comprehensive medical care. They may supervise the implementation of care and treatment plans by other health care providers, and conduct medical education and research activities.	General Medical Practitioners, Medical Doctors, Physicians.
	Medical Specialists (2212)	Medical doctors with minimum of 3 year of postgraduate education/ training. They are recognized as specialists by a national regulatory body (such as medical council).	Preventing, diagnosing, caring for and treating illness, disease and injury in humans using specialised testing, diagnostic, medical, surgical, physical and psychological techniques. They specialise in certain disease categories, types of patient or methods of treatment, and may conduct medical education and research activities in their chosen areas of specialisation. They may supervise the implementation of care and treatment plans by other health care providers.	Anesthesiologists, Cardiologists, Community medicine specialists, Critical care medicine specialists, Dermatologists, Emergency medicine specialists, Endocrinologists, Family medicine physicians/ specialists, Gastroenterologists, Geriatric medicine specialists, Haematologists, Hepatologists, Infectious disease specialists, Medical examiners, Medical oncologists, Neonatologists, Nephrologists, Neurologists, Nuclear medicine specialists, Obstetric-Gynecologists, Occupational medicine specialists, Orthopedic surgeons, Otolaryngologists (ear, nose, and throat specialists), Pathologist, Pediatrician, Perinatologist, Preventive and social medicine/Public health specialists, Psychiatrists, Radiation oncologists,

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
				Radiologists, Rheumatologists, Sports medicine specialists, Surgeons, Urologists.
Dental Practitioners	Dentists (2261)	Professionals with minimum of 4 years of accredited university education leading to a dentistry degree and 1 year of internship	Diagnosing, treating and preventing diseases, injuries and abnormalities of the teeth, mouth, jaws and associated tissues to promote and restore oral health.	Dentists.
	Dental Specialists (2261)	Dentist with accredited post-graduate degree in dental specialty. They are recognized as specialists by a national regulatory body (such as dental council).	Diagnosing, treating and preventing diseases, injuries and abnormalities of the teeth, mouth, jaws and associated tissueswhere the complexity of a condition requires specialised diagnostic, surgical and other techniques to promote and restore oral health. They usually practise in their specialized field only.	Endodontists, Oral and maxillo-facial surgeons, Orthodontists, Paedodontists, Periodontists, Prosthodontists.
	Dental Technicians (3251)	Assistants to dentists with minimum of 3 year of training in dental skills.	Provide basic dental care services for the prevention and treatment of diseases and disorders of the teeth and mouth, as per care plans and procedures established by a dentist or other oral health professional.	Dental Assistants, Dental Hygienists, Dental Nurses.
Pharmacy practitioners	Pharmacists (2262)	Professionals with minimum of 4 years university education in pharmacy and 1 year of internship.	Store, preserve, compound, test and dispense medicinal products. They counsel on the proper use and adverse effects of drugs and medicines following prescriptions issued by medical doctors and other health professionals. They contribute to researching, preparing, prescribing and monitoring medicinal therapies for optimising human health.	Pharmacists.
	Pharmaceutical technicians/assistants (3213)	Assistants to pharmacists with minimum of 3 year of accredited education in pharmacy assistant or technician.	Perform routine tasks associated with preparing and dispensing medicinal products under the supervision of a pharmacist or other health professional.	Pharmacy Assistants
Nursing and Midwifery practitioners	Nursing professionals (2221)	Professionals with minimum of 4 years of accredited education in the field of nursing and 1 year internship	Plan, manage, provide and evaluate nursing care services for persons in need of such care due to effects of illness, injury, or other physical or mental impairment, or potential risks for health.	Professional Nurses

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
			They work autonomously or in teams with medical doctors and other health workers. They may supervise the implementation of nursing care plans, and conduct nursing education activities.	
	Midwifery Professionals (2222)	Professionals with minimum of 4 years of accredited education in the field of midwifery and 1 year of internship	Plan, manage, provide and evaluate midwifery care services before, during and after pregnancy and childbirth and newborn care. They provide normal delivery care for reducing health risks to women and newborns, working autonomously or in teams with other health care providers. They may supervise the implementation of midwifery care plans, and conduct midwifery education activities.	Professional Midwives.
	Nursing Specialists (2221)	Nursing Professionals with minimum of 2 year of accredited post-basic training/education in any specialty in nursing (e.g. pediatric, neonatal, cardiac nursing, etc) and 1 year of internship They are recognized as specialists by a national regulatory body (such as nursing council).	Plan, manage, provide and evaluate specialized nursing care services for persons in need of such care due to effects of illness, injury, or other physical or mental impairment, or potential risks for health. They specialise in certain nursing specialty and may conduct nursing education and research activities in their chosen areas of specialisation. They work autonomously or in teams with medical doctors and other health workers. They may conduct midwifery education activities and provide consultation to other nursing practitioners.	Nurse specialist
	Nursing Associate professionals (3221)	Practitioners with minimum of 3 year (including internship) of accredited education in the field of nursing.	Provide basic nursing care for people who are in need of such care due to effects of illness, injury, or other physical or mental impairment. They implement care and referral plans as per plans, practice and procedures established by nursing and other health professionals.	Nurse associate
	Midwifery Associate professionals (3222)	Practitioners with 3 years of accredited education in the field of midwifery.	Provide basic midwifery care and advise before, during and after pregnancy and childbirth and newborn care. They implement care and referral plans, including normal delivery, to reduce health risks to women and newborns as per plans, practice and procedures established by midwifery and other health professionals.	Midwives associate

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
Non-Medical Public Health Practitioners	Public Health Generalists (2263)	Non-medical professionals with university education in public health bachelor's degree.	Plan, manage, provide and evaluate basic public health services for disease prevention and promotion of population health. They manage environments to reduce health risks of the community.	Public Health Officer, Public Health Technical Officer.
	Food and Nutrition Professionals (2265)	Professionals with minimum of 3 years and 4 years of university education in nutrition/dietetics.	Plan, manage, provide and evaluate various dietary interventions, clinical and/or public health nutrition programmes, food safety, food technology or food toxicology programmes.	Nutritionists, Food Science specialists, Dieticians.
	Environmental and Occupational Health Professionals (2263)	Professionals with minimum of 3 years of university education in environmental and/or occupational health.	Plan, assess and investigate the implementation of programs and regulations to monitor and control environmental factors that can potentially affect human health, to ensure safe and healthy working conditions, and to ensure the safety of processes for the production of goods and services.	Environmental Health Officer, Sanitarians, Occupational Health officer.
Medical Technologists	Medical Imaging Technicians (3211)	Practitioners with minimum of 3 years of education in medical technology, radiology or a related field.	Test and operate radiographic, ultrasound and other medical imaging equipment to produce images of body structures for the diagnosis and treatment of injury, disease and other impairments.	Radiographers, Mammographers.
	Medical Technicians (3212)	Practitioners with minimum of 3 years of accredited education/training in medical technology or related field.	Perform tests on environmental and human specimens of body fluids and tissues in order to get information about the disease epidemiology and / or health of a patient or cause of disease/death.	Medical Laboratory Technicians, Blood Bank Technicians.
	Laboratory Assistants (3212)	Assistants to medical technicians with minimum of 3 year of accredited training in any health technicians' course. (e.g. laboratory, radiology, etc.).	Assist in non-invasive diagnostic/screening procedures (radiographic, ultrasound, other imaging procedures) or perform/assist in conduct of tests on environmental and human specimens of body fluids and tissues in order to get information about the disease epidemiology and / or health of a patient or cause of disease/death as per plan, practices and procedures established by medical technology and other health professionals.	Medical Laboratory Assistants, Assistant Radiographers, Assistant Blood Bank Technician
	Biomedical technologists (3211)	Practitioners with minimum of 3 years of education in the field of bio-medical engineering or a related field.	Service, maintainand repair radiographic, ultrasound, laboratory and other medical equipment.	Medical Equipment Technicians, Medical Equipment Engineers, Biomedical technologist, Biomedical Engineers.

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
Traditional Medicine Practitioner	Traditional Medicine Practitioners (2230)	Practitioners recognized in indigenous system of medicine (Homeopathic/ Oriental Medicine /Complementary Medicine) with minimum of 3 years education	Apply procedures and practices based on the theories, beliefs and experiences indigenous to different cultures, used in the maintenance of health and in the prevention or treatment of physical and mental illnesses.	Traditional practitioner
Veterinary practitioners (working for human health aspects)	Veterinary Public Health Specialists (2250)	Veterinary doctors (professionals with at least 4 years of university education in the field of veterinary medicine + internship) with minimum 1 year of post-graduate education on epidemiology/ veterinary public health.	Preventing, diagnosingand controlling zoonoses, food borne illnesses and intoxications. Providing expert opinion as a team member in outbreak investigation of emerging diseases/zoonoses at the human animal interface. They may assume responsibility for food safety.	Veterinary Public Health Specialists, Veterinary Epidemiologists.
	Veterinary technicians and assistants (3240)	Assistants to veterinarians with minimum 3 year of education in animal science.	Assist in performing basic veterinary tasks to support laboratory animal management and zoonoses control under the direct supervision of, or as per plan, practices and procedures established by a veterinary doctor or other health professional.	Veterinary Technicians, Veterinary Assistants
Other Health Workers	Optometrists (2267)	Practitioners with minimum of 3years education in the field of optometry	Provide primary eye health and vision care services. They provide diagnosis management and treatment services for disorders of the eyes and visual system. Dispensing opticians design, fit and dispense optical lenses for the correction of reduced visual acuity.	Optometrists, Ophthalmic Technicians.
	Physiotherapists (2264)	Practitioners with minimum of 3 years of education in physiotherapy.	Provide physical therapeutic treatments to patients in circumstances where functional movement is threatened by injury, disease or impairment. They may apply movement, ultrasound, heating, laser and other techniques.	Physiotherapists, Physical Therapists.
	Occupational Therapy Assistant (2269)	Assistants to occupational therapists with minimum of 1 year of education in occupational therapy.	Provide basic occupational therapeutic treatments to patients as per plan, practices and procedures established by occupational therapy and other health professionals.	Occupational Therapy Assistant.
	Medical Records	Practitioners with minimum of 3 year	Assess, manage and implement health records processing, storage and retrieval systems	Medical Records Technicians, Health

Category	Sub-category (Code)	Definition based on educational qualification	Scope of work	Examples of designations
	Technicians (3252)	of education in health information and/or medical records.	in medical facilities and other health care settings to meet the legal, professional, ethical and administrative records-keeping requirements of health services delivery.	Statisticians.
	Support staff	Clerical, accounting, and other support staff.	This category may include a wide range of occupations connected with health service provision.	Ward Clerks, Medical Secretary, Medical Store Keeper.
Category	**Sub-category (Code)**	**Definition based on educational qualification**	**Scope of work**	**Examples of designations**

Note: To adapt from annex 2 (Health workforce classification of WHO South-East Asia Region) taking into account country's context.

Annex 4: Health workforce by cadres and population ratios at national level

Category	Sub-category	Cadres*	2009		2010	
			Number	HW/1000 population	Number	HW/1000 population
Medical Practitioners	General Practitioner		17,062	0.07	25,333	0.11
	Medical Specialists		17,482	0.08	8,403	0.04
	Medical Assistants		-	-	-	-
Dental Practitioners	Dentists		4,878	0.02	8,731	0.04
	Dental Specialists		564	0.00	474	0.00
	Dental Technicians		NA	NA	227	0.00
Pharmacy practitioners	Pharmacists		2,007	0.01	6,264	0.03
	Pharmaceutical technicians/ assistants		8,771	0.04	11,758	0.05
Nursing and Midwifery practitioners	Nursing professionals		136,864	0.59	158,688	0.67
	Midwifery Professionals		54,153	0.23	96,551	0.41
	Nursing- Midwifery Professionals		2,036	0.01	NA	NA
	Nursing Specialists		1,346	0.01	11,109	0.05
	Midwifery Specialists		NA	NA	NA	NA
	Nursing Associate professionals		NA	NA	NA	NA
	Midwifery Associate professionals		NA	NA	NA	NA
	Nursing-Midwifery Associate professionals		NA	NA	NA	NA
Non-Medical Public Health	Public Health Generalists		4,519	0.02	18,598	0.08

Category	Sub-category	Cadres*	2009		2010	
			Number	HW/1000 population	Number	HW/1000 population
Practitioners	Public Health Specialists		490	0.00	2,766	0.01
	Food and Nutrition Professionals		6,248	0.03	12,823	0.05
	Environmental and Occupational Health Professionals		5,375	0.02	13,505	0.06
	Environment and occupational health inspectors and associates		NA	NA	NA	NA
	Community Health workers		NA	NA	NA	NA
	Community Health Volunteers		NA	NA	NA	NA
Medical Technologists	Medical Imaging Technicians		2,449	0.01	3,708	0.02
	Medical Technicians		200	0.00	1,028	0.00
	Laboratory Assistants		1,829	0.01	5,530	0.02
	Biomedical technologists		NA	NA	NA	NA
Traditional Medicine Practitioner	Traditional Medicine Practitioner		NA	NA	NA	NA
Veterinary practitioners	Veterinary Public Health Specialists		NA	NA	NA	NA
	Veterinary technicians and assistants		NA	NA	NA	NA
Other Health Workers	Optometrists		NA	NA	269	0.00
	Physiotherapists		1,655	0.01	2,359	0.01
	Physiotherapy Assistants		NA	NA	NA	NA
	Occupational Therapists		119	0.00	121	0.00
	Occupational Therapy Assistant		NA	NA	NA	NA
	Other health professionals not		NA	NA	NA	NA

Category	Sub-category	Cadres*	2009		2010	
			Number	HW/1000 population	Number	HW/1000 population
	elsewhere classified					
	Other health associate professionals not elsewhere classified		NA	NA	NA	NA
Health management and support staff	Health Service Manager		NA	NA	NA	NA
	Medical Records Technicians		NA	NA	1,159	0.00
	Support staff		60,116	0.26	109,307	0.46
TOTAL			**328.044**	**1.42**	**498,590**	**2.11**

Note: * Please provide names of all cadres, additional rows may be added to accommodate all cadres under each sub-category.

Annex 5: Health workforce status

Category	Sub-category	Cadre*	Total	% Women	% Urban	% Rural	% Public	% Private
Medical Practitioners	General Practitioner		25,333					
	Medical Specialists		8,403					
Dental Practitioners	Dentists		8,731					
	Dental Specialists		473					
	Dental Technicians		227					
Pharmacy practitioners	Pharmacists		6,264					
	Pharmaceutical technicians/ assistants		11,758					
Nursing and Midwifery practitioners	Nursing professionals		158,688					
	Midwifery Professionals		96,551					
	Nursing Specialists		11,109					
Non-Medical Public Health Practitioners	Public Health Generalists		18,598					
	Public Health Specialists		2,766					
	Food and Nutrition Professionals		12,823					
	Environmental and Occupational Health Professionals		13,505					
Medical Technologists	Medical Imaging Technicians		3,708					
	Medical Technicians		1,028					
	Laboratory Assistants		5,530					
Other Health Workers	Optometrists		269					
	Physiotherapists		2,359					

Category	Sub-category	Cadre*	Total	% Women	% Urban	% Rural	% Public	% Private
	Occupational Therapists		121					
	Medical Records Technicians		1,159					
	Support staff		109,307					
TOTAL			**498,590**					

Urban health workforce = All health workers working <u>in</u> cities, municipalities, and district centres/head offices (including those health workers in other sectors outside health ministries).

Rural health workforce = All health workers working <u>outside</u> cities, municipalities, and district centres/head offices (including those health workers in other sectors outside health ministries).

Note: * Additional rows under each sub-category may be added to incorporate all cadres under the respective sub-category as per country's context.

ANNEX 6: Members of the taskforce

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