

# *Annex 10. INDONESIA case study*

## **Background**

Indonesia is an archipelagic island country in southeast Asia, lying between the Indian and Pacific Oceans, strategically located astride or along major sea lanes.<sup>87</sup> Indonesia is located in an area of the world that experiences regular natural disasters, such as earthquakes, tsunamis, floods, severe droughts, and volcanic eruptions. These civil disturbances have contributed to an increasing number of emergencies in Indonesia. Both natural and man-made disasters have resulted in increased mortality and morbidity, as well as a growing population of displaced people.<sup>88</sup> Additionally, Indonesia faces demands for independence in several provinces,<sup>89</sup> and although Indonesia's political outlook is currently stable,<sup>90</sup> continued reforms to address weak institutions are still needed and demanded.

Indonesia's government has made important efforts to increase the provision of health services, which has improved health outcomes such as life expectancy and child mortality. Although the incidence is declining, communicable diseases still remain important and account for 43% of deaths in Indonesia.<sup>91</sup> HIV/AIDS, Tuberculosis (TB), dengue fever, dengue hemorrhagic fever (DHF), and avian influenza<sup>92</sup> all pose severe public health risks.<sup>93, 94</sup> Recent World Health Organization (WHO) reports on the burden of mortality and morbidity attributable to non-communicable diseases (NCDs) state that NCDs are estimated to account for 64% of deaths.<sup>93, 94</sup>

Indonesia is committed to providing universal health insurance coverage to its population through a mandatory public health insurance scheme.<sup>91</sup> Under the National Social Security System, coverage for the poor will be financed by the government and coverage for the remainder of the population will be financed through a contributory scheme.<sup>91</sup> The legislation envisages the involvement of existing health insurance carriers, provided they had converted to non-profit status by October 2009.<sup>91</sup> This public health policy also includes a provision for local governments to opt out and establish their own "comparable" systems. In 1999, the Ministry of Health released the Health Development Plan Towards Healthy Indonesia 2010,<sup>95</sup> which states that its goals are to initiate, lead, and herald the orientation of national development; to maintain and enhance individual, family, and public health along with improving the environment; to maintain and enhance health services; and to promote public self-reliance in achieving good health.

The implementation of new laws caused the government to be changed from a centralized to decentralized type of administration, thereby providing regional autonomy.<sup>88</sup> Regions received substantial financial transfers, the regional share in government spending jumped sharply, and a completely new intergovernmental fiscal system was put in place.<sup>96</sup> A more recent analysis of the decentralization process is more critical and identifies several unintended consequences.<sup>97</sup> Expectations about improvements in governance and service delivery proved to be elusive.<sup>97</sup> The Indonesian experience suggests that decentralization resulted actually in major dents in the quality of governance in the country. In particular, quality of government effectiveness and control of corruption plummeted in the early years of decentralization.<sup>97</sup>

Although expenditures for the health sector have been rising gradually over the past few years, levels are still below 5% of total government spending and below 1% of GDP.<sup>98</sup> The current spending mix is less than optimal to address Indonesia's development challenges,<sup>99</sup> particularly those aspects related to

fighting poverty, and the improvement of health services.

The strategy of the Ministry of Health is built on 4 pillars: community empowerment; health financing; access to health services; and, surveillance. These pillars are translated into programs, such as community empowerment, which foresee a health worker (midwife and/or nurse) in every village by 2009.<sup>100</sup> Indonesia's health system continues to be based on the principles and features of Alma Ata (universal access to public primary health care), although half of all health spending is private, largely out-of-pocket, and almost half of all those who are ill actually seek health services from private providers.<sup>91</sup>

Regarding the structure of the health system,<sup>101</sup> in Indonesia there are 33 provinces and each province is sub-divided into districts and each district into sub-districts. As decentralization had been already implemented, the 349 regencies and 91 municipalities are now the key administrative units.<sup>101</sup> Each sub-district in Indonesia has at least one health center headed by a doctor, usually supported by two or three sub-centers, the majority of which are headed by nurses. Health centers mainly provide eight programs.<sup>101</sup> Most of the health centers are equipped with four-wheel drive vehicles or motorboats to serve as mobile health centers and provide services to underserved populations in urban and remote rural areas.<sup>101</sup>

Despite the government's recent increases in health spending, public health expenditure remain clearly low. Indonesia spends less than 3% of GDP on health (of which less than 1% is public spending), which is less than the average.<sup>102</sup> Indonesia's health infrastructure is relatively less developed, with fewer hospital beds per 10,000 population than its neighbors in the region.

Many public health facilities reportedly suffer from weak infrastructure and a lack of equipment.<sup>102</sup> The country as a whole suffers from a lack of doctors, nurses, and to some extent midwives, particularly in rural and remote areas.<sup>102</sup> Neighboring countries spend more and have better health outcomes, including child and maternal mortality rates.<sup>102</sup>

Overall, studies call for envisioning a new health system that takes into account the dramatic changes that Indonesia has undergone, as a crucial first step for development of a human resources policy which, in turn, will require more information about health care providers, public and private, and increased capacity for planning in human resources for health.<sup>90</sup>

## **Situational analysis of mid-level health workers (MLHW)**

### **National HRH strategic plan and policy and MLHW**

A report from the WHO regional office for southeast Asia including Indonesia and other countries states that most countries in the region have a national strategic plan of action for nursing and midwifery development, and find it potentially invaluable in the process of providing more and better health, but implementation, impact evaluation and monitoring of this strategic plan have met several challenges and thus there is uneven success in such efforts.<sup>103</sup>

Although under the Big Bang decentralization responsibility for the implementation of health services was transferred to districts, together with almost 250 thousand health workers, the central government actually retained its policymaking, financial and managerial capacity.<sup>104</sup> It was not a physical relocation, only an administrative one. Accordingly, the central level is continually involved in strategic planning

that includes human resources for health policies.<sup>104</sup> Under this decentralization process, districts are supposed to be responsible for employment, deployment, and payments. However, the regulations that delegate authority to make decisions and the budgets required to implement them are vague. Actually, central government authorities retain key decision-making responsibilities and financial control, and much-needed civil service reforms have not materialized,<sup>104</sup> including managerial capacity building at local level.

Indonesia is one of a small number of middle-income countries legislatively committed to providing universal health insurance coverage to its population through a mandatory public health insurance scheme, which was established by Law No. 40/2004 that created the National Social Security System.<sup>91</sup> Coverage for the poor should be financed by the government and financing for the remainder of the population should be through a contributory scheme.<sup>91</sup> The legislation envisaged the involvement of the existing health insurance carriers (including *P.T. Askes* and *P.T. Jamsostek*), provided they converted to non-profit status by October 2009.<sup>91</sup> Additionally, there is also provision for local governments to opt-out and establish their own “comparable” systems that may include health insurance and generalized subsidy (free health care).<sup>91</sup>

### Deployment policies

As a result of the lack of skilled manpower in many districts, as well as an imperfect decentralization process, the Ministry of Health is still deeply involved in planning and managing regional staff and programs.<sup>104</sup> Existing sectoral laws have not been amended, adding to the confusion over the role of local governments. The development of sectoral objectives, policies, and plans, and related tasks, such as setting minimum performance standards, manpower planning, and preparation of the annual *formasi* exercise, are still done centrally by the Ministry of Health.<sup>104</sup>

From the late 1960s to 1970s, Indonesia’s health system goal was to provide access to primary care, through the development of health centers at sub-district and district level hospitals.<sup>104</sup> As a result, the number of public health facilities grew steadily. Community services were included as well, staffed by doctors, midwives, and nurses under civil service contracts. A compulsory rural and remote service in public facilities determined by the government was enforced to ensure adequate coverage such difficult areas.<sup>104</sup> Until the early 1990s, all medical school graduates automatically became civil servants and were obliged to serve 2-5 years at a *puskesmas* (*Pusat Kesehatan Masyarakat*: health center at sub-district). The term would be 5 years if the *puskesmas* was considered to be in a regular or more urbanized area, 3 years in a rural area, and 2 years in a more remote area.<sup>104</sup> After serving in a remote area, physicians were also more likely to be accepted for further specialist training through the public system, which would have served as an incentive for remaining in those rural and underserved areas.<sup>104</sup> An effect attributable to this intervention was that by the 1980s, Indonesia’s health system was close to providing universal coverage for primary and basic health care, and essentially all doctors, midwives, and nurses were employed as civil servants. The private health care sector at the time was limited.

In response to the fiscal crisis of the late 1980s, however, the government in the early 1990s introduced an overall policy of zero growth of the civil service, as a measure to control public spending.<sup>104</sup> Unlike other countries that introduced such measures, Indonesia provided no exception for medical doctors. This policy had a strong impact, reducing the number of health workers in the public sector, especially physicians, as it eliminated the main incentive for deployment to remote areas.<sup>104</sup> A relatively short period of mandatory service would now be followed by appointment to a civil service position.

To mitigate the effect of the removal of this attraction and retention intervention, the Ministry of Health initiated the *Pegawai Tidak Tetap* (PTT), or contract physician scheme, that hired recent medical school graduates as contractors, not as civil servants, and required from them a period of service in underserved areas.<sup>104</sup> After their first 3 years, PTT doctors had the opportunity to continue their education, go into the private sector, or become civil servants by taking the national civil service examination. Those PTT doctors who had served in remote or very remote areas through the PTT scheme would generally receive priority in the subsequent civil service recruitment process. Along with these attraction/retention measures, changes were made to the village midwife program, which also started recruiting midwives under PTT contract schemes, with the expectation that the midwives would establish themselves as private providers after a number of years as contractors.<sup>104</sup>

The PTT policy changed over time however, and in early 2000 the number of graduates directly recruited into the civil service began to decline. Assuming that about 5,000 medical students graduate each year, the public sector only absorbed about 40% through the PTT program.<sup>104</sup> Medical graduates were growing more dissatisfied with the program policy and mandatory service. As a result, in 2007, compulsory PTT contracts were abolished.<sup>104</sup> The government remained concerned about providing medical care in remote and rural areas, however. Thus a new policy was established offering a 6-month period of service in remote areas for new graduates and an attractive salary package.<sup>104</sup> In addition to the base salary, the new graduates received a monthly bonus amounting to as much as two-and-a-half times the base for very remote postings.<sup>104</sup> This incentive package (generous remuneration and a short term of service), combined with a growing number of medical graduates entering the labour market after an expansion in the number of medical schools, has increased the interest of graduates in rural and remote postings.<sup>104</sup> In addition, service as a PTT contract doctor in a remote area still contributes to positive evaluation for recruitment into the civil service.<sup>104</sup>

## Planning for Health Workforce Needs

Since the 1980s, the Ministry of Health has resorted to several approaches to determine staff needs, using projections based on community health status, demographic changes, and existing health programs.<sup>104</sup> The earliest approach was to use minimum standards for staffing needs, for example, 1 doctor per *puskesmas*. However, this was widely considered impractical because it did not reflect actual need. Although guidelines for new methods that consider demand have been distributed, little is known about local governments' actual use of them. After the 2001 decentralization process, districts received authority to manage *puskesmas* and public hospitals, but the actual authority to hire and fire staff remains vague. The districts directly request for new staff, particularly strategic staff such as doctors, midwives, and nurses, to the Ministry of Health through the province.<sup>104</sup> But most districts still refer to national staffing standards rather than actual demand for services when sending their staffing request, reducing the potential impact of improving the health workforce imbalance.

At central level, the Ministry of Health allocates staff based on available resources and on the *formasi* for a particular district, although available *formasi* do not always match with district need. The licensing of new private health providers and service points is the responsibility of local governments.<sup>104</sup> However, no clear guidelines or criteria exist as to how to determine the need for new health facilities. Moreover, after the decentralization process, the central-level planning unit lost much of its information on the number of private providers, hampering the planning capacity for health workforce needs and adequate oversight or quality assurance.<sup>91, 104</sup>

## Dual Practice Regulation and Provider Payment Methods

Public sector doctors, nurses and midwives in Indonesia can also practice in the private sector. The policy of allowing public employees to work as private providers was intended to create an incentive for physicians and midwives to stay longer in their duty posts.<sup>104</sup> However, dual practice of public physicians reportedly impacts public sector access, efficiency, and overall health system and out-of-pocket costs.<sup>91</sup> In addition, small numbers of patients, lack of access to further education, and missed opportunities are common in remote areas and often still make it difficult to retain personnel.<sup>104</sup>

The Village Midwife Program has been successful in deploying midwives to villages, but a high turnover rate, low morale and motivation, and retention limitations are some of the problems that need to be addressed.<sup>104</sup> Provider payment methods are among many tools policymakers can use to improve efficiency and are one of the critical factors affecting health workforce behavior.<sup>104</sup> In Indonesia, only a very few purchasing and payment methods are used, for example, salaries for civil servants and PTT contractors in public primary care, and fees for services in hospitals and those of private providers. However, these methods do not sufficiently link performance to payment, nor do they create incentives to provide better-quality services, reducing therefore the potential improvement of providers performance, the quality of care and the ultimate impact on health status.<sup>91, 104</sup> Regarding dual practice, proper oversight mechanisms to ensure accountability for public working hours and maintain quality standards are still weak in Indonesia.<sup>98</sup> In addition, since urban areas are generally more attractive to private health service providers, dual practice is likely also contributing to the shortage of health workers in rural areas.<sup>98</sup>

## Public Expenditures in Health

Public expenditures in the health sector increased significantly over the past decade in Indonesia, but remain low compared to those of other countries in the region.<sup>91, 98</sup> Increases in health spending reflect the government's priority on health, relative to other sectors, as well as the availability of fiscal space.<sup>104, 98</sup> Indonesia's capacity to increase health spending grows as fiscal space increases, even with the current financial crisis. Fiscal space implies not only an increase in nominal spending, but also improving the efficiency of current outlays.<sup>91, 98, 104</sup> The wages of the health workforce compose the largest share of public spending on health, reaching 81% of local government routine health expenditures. Using various payment allowances more strategically and implementing results-based payment mechanisms are important considerations in financing both more and better-quality health services.

Some weaknesses of the Indonesian health system that represent challenges to be overcome if strategic planning of human resources is going to be successful and have a measurable impact in population health status include, but are not limited to the following aspects: a highly fragmented and underfunded health system, limited with respect to insurance coverage, and replete with allocative and technical inefficiencies resulting from, and in, low productivity; low levels of both physical and human resources compared with other similar income countries, and major shortages of physician specialists; difficult geography, which constitutes a hard challenge to provide access in rural areas, where some 70% of its population resides; drawbacks of the system, characterized by poor quality and inefficient service delivery—lack of professionalism (non-compliance with good practice protocols and high absenteeism), uneven deployment, and low motivation in the health workforce; poor quality of care results in high levels of self-treatment; dual practice of public physicians impacts public sector access, efficiency, and overall health system and out-of-pocket costs; heavy reliance on the private sector for provision of health services without adequate oversight or quality assurance; low hospital occupancy rates—about 60% in 2006—and large regional differences in hospital efficiency; little planning focused on overall needs and joint public-private sector capacity development.<sup>91</sup>

## The Quality of Educational Institutions

The health education system itself, the accreditation of education institutions, and the certification of health workers are subjects of concern over quality.<sup>104</sup> Although some systems have been established, such as that which accredits medical, midwifery, and nursing schools, there are not clear rules for assuring an accreditation process performed by an independent body.<sup>104</sup> In addition, serious deficiencies exist in the standards, making accreditation very difficult to begin with, and accreditations that have been conducted are not publicized, casting doubts on transparency.<sup>91, 98, 104</sup> At the same time, private institutions producing large numbers of physicians, midwives, and nurses are growing rapidly with little oversight over their quality, which constitutes an additional concern on the ultimate efficiency and quality of care that the health system and the human resources for health will be able to provide.<sup>98, 104</sup>

## Growth of the Private Sector

Although the private health sector has grown in scale, oversight by the public sector remains very limited.<sup>104</sup> A functional information system with reliable data on private sector evolution overtime is lacking and therefore, little is known about private providers, the quality of their services, and how many hours they work.<sup>99, 104</sup> The government has lost most of its ability to influence and oversee the private sector, the quality and provision of its services, and its geographic distribution.<sup>104</sup> Some recent studies do address the private sector including the Initiative for Maternal Mortality Program Assessment (IMMPACT) studies, which focus on midwives. Estimates for all categories of health care providers indicate a growing private sector health workforce.<sup>104</sup> These providers work in private facilities (private hospitals, treatment clinics) or in their own private practices, with or without an appointment by the government. Moreover, because the membership lists and associated information that the professional societies maintain are not up to date, it is likely that many of the studies significantly underestimate the size of the private sector.

## Underlying Transitions and Challenges to Health System and to Health Workforce

In Indonesia, as in many other countries, fertility rates have declined and the population is starting to age. This demographic transition and its associated epidemiological transition will change the composition of demand for health services and necessitate additional reforms to health workforce planning and management. A number of events in the future may put additional stress on the health sector and human resources in particular. The changing disease patterns (rapidly emerging non communicable diseases and injuries, while communicable diseases continue to spread) and re-emerging health issues such as polio, HIV/AIDS, and avian influenza are likely to require a different skill mix.<sup>104</sup> More people will suffer from non-communicable diseases as a result of aging and increased prevalence of risk factors such as obesity and smoking. The demand for curative and inpatient care will increase, with important implications for the number of hospital beds required, as well as skill requirements for new health personnel. At the same time, the demand for core public health functions (surveillance, immunization, health promotion) will continue or increase. In the meantime, health service delivery in Indonesia relies on a one size-fits-all model, although great variation exists in health needs across Indonesia's vast and diverse territory. Varied health outcomes reflecting performance are seen, with rapidly declining infant mortality and maternal mortality rates in provinces such as Java and Bali, but to a far less extent in eastern Indonesia, for example.<sup>104</sup> The health sector will need to respond to this variation in demand with changes in its staffing policies and staff skill mix.



The current Indonesian health system comprises public and private health services. The provision of public health services is the responsibility of the Ministry of Health (MoH) and sub-national governments. These public sector actors deliver both in-patient and out-patient services. Meanwhile, private health care has been growing rapidly. It consists of ambulatory services provided by private practitioners and by government medical staff operating private practices part-time, as well as private clinics and specialized hospitals that provide in-patient care. A recent study on health facilities distribution at district level showed a substantially higher number of healthcare facilities in each district than is shown in most reports and in the health information system that concentrates on public, multi-provider facilities.<sup>105</sup> Across 15 districts studied, 86% of facilities were solo-provider facilities for out-patient services; 13% were multi-provider facilities for out-patient services; and 1% were multi-provider facilities offering both out-patient and in-patient services.<sup>105</sup> The study also found that the district level staff established additionally solo-provider facilities for their own private practice public sector. This staff had been deployed at district level as a consequence of introduction of obligatory government service for all new graduates in medicine, nursing and midwifery in the 1980s.<sup>105</sup> According to the study, most of these solo-provider facilities are not included in official statistics, and those for nurses are almost half, comprising apparently the largest category of outpatient care facilities.<sup>105</sup>

Indonesia's approach to health system development has followed the Alma Ata "Health for All" paradigm in that it has focused on integrated service provision at the primary care level. *Puskesmas* are the linchpin of the health system, which is characterized by heavy reliance on health workers, not necessarily physicians, in the field. As with many developing countries at that time, Indonesia expanded its rural primary health facilities and moved away from sole attention to urban hospitals. Indonesia has largely achieved the goal of expanding its primary care infrastructure and placing a health worker in each village. In addition, by legalizing dual practice, the government has promoted increased availability of services as the private health sector has grown. Thus the Indonesian health system including its health workforce will need important changes if it is going to face successfully the above described transitional changes that Indonesia is undergoing.

### Situation analysis

A recent health information system (HIS) assessment indicates that Indonesia's national policy on health information systems describes the components but the strategic planning and operational guidance have not yet been developed (HMN 2007).<sup>91</sup> In addition, private health providers participate very little in the HIS; as a result there is no information regarding almost 50% of health service delivery.<sup>91</sup> Although data are being collected, the integration of information is inadequate, there is overlap and duplication, and many areas for improved quality and efficiency can be identified.<sup>91</sup> At the district level, the reporting system has been considered voluntary since decentralization and, as a result, there are no dedicated staff for HIS at the *Puskesmas* level.<sup>91</sup> HIS has been implemented in hospitals, but mainly for the purpose of medical records and billing (HMN 2007).<sup>91</sup> The breakdown of the information system at the decentralized level and the lack of coordination at the national level explain the lack of information at the national level since 2001.<sup>91</sup>

### Types of Mid-Level Health Workers

The types of mid-level health workers in Indonesia who constitute the workforce for providing health services include nurses and midwives and are considered in further detail in the following sections.

#### Nurses

Staffing of *Puskesmas pusat kesehatan masyarakat* (public health center) and *Pustu puskesmas pembantu* (auxiliary health center) at national level show a decrease in the density of nurses from 5.85 per 10,000 population in 1997 to 3.69 per 10,000 population in 2007 (Table 34).<sup>104</sup> In urban and rural areas the trends were also decreasing, almost in the same proportion (Table 34). PODES (*Potensi Desa: Survey of Village Potential*) data show a decrease of nearly 50% in the number of nurses between 1996 and 2006, even though an estimated 34,000 new nurses enter the labour market each year.<sup>104</sup> When *Puskesmas* nursing staffing was considered by region (Table 35), the density increased from 4.58 in 1997 to 5.60 in 2007 in Java and Bali, with the same trend in Sumatra and other provinces.<sup>104</sup> *Pustu* facilities showed a slight density increase in Java and Bali, and a decrease in Sumatra and other provinces; with remarkably lower density figures than those observed in the other regions. However, caution must be taken when interpreting these figures, due to drawbacks of the health information system regarding this particular health cadre. For instance, PODES estimates may be biased downward because nurses do not run their own practices (at least legally), and so village heads may underestimate the number of nurses in the community. Indonesia Health Profiles, published by the Ministry of Health, and the GDS-2 survey both suggest significantly higher numbers of nurses than PODES.<sup>104</sup> Hence data on nurses are ambiguous at best, and therefore details on their numbers and distributions are not discussed in this work. Indonesian nurses fulfill a critical function in the health system and are often the only health workers in remote and poor rural areas. They are often required to provide services and medical treatments for which they are not trained nor allowed to perform under the medical practice law. It is precisely because nurses provide a large part of health services in remote areas and to the poor that the dearth of data regarding nurses needs urgent attention.<sup>104</sup>

A recent study was performed in 3 districts of Java that relied on health district records, taking advantage of a recent decision of Indonesian government of offering health workers working on contract to become permanent civil servants.<sup>106</sup> It found a consistent increase in the number (and density) of doctors, nurses and midwives working as permanent civil servants in the period from 2006 to 2008, with nurses showing the greatest increase (43%), followed by midwives (35% increase) and doctors (27%). The increases for permanent public servants were proportionately much greater (43%) than the total (16%). Although the results may seem encouraging, this study emphasizes the points of continued weakness of national and district health information system, the decrease of budgetary lines for managerial activities and for monitoring and evaluation of performance and quality of care monitoring as a results of increase in budget allocated to salaries, the lack of incentives for going beyond the mere increase of number of health cadres, and the lower margin for policymaking decisions at district level, factors all that need to be addressed if health interventions implemented at district level are going to be successful.

## Midwives

Midwives were also included in the recent decision of central government decision to offer health workers on contract the chance to convert to permanent civil service status. The study performed in 3 districts of Java quoted in the section above showed a substantial increase in their number and density in all 3 districts, with more midwives working as permanent civil servants in 2007 than in 2006.<sup>106</sup> The same concerns regarding the functionality of the health information system and the lower flexibility and managerial capacity at district level are valid as challenging factors that may hamper an improvement of midwives performance and ultimately their contribution to measurable impacts on health indicators.



Indonesia has no central registration system for nurses or midwives, and hence no up-to-date information is available on their numbers. According to PODES, which at present is the most accurate source of data, Indonesia had almost 80,000 midwives in 2006. The number of midwives per capita increased from 35 per 100,000 population in 1996, to 37 per 100,000 in 2006. As with physicians, this aggregate figure masks imbalances in distribution. Unlike the distribution of physicians, however, rural areas have higher ratios than urban areas (Tables 48 to 51). The PODES data also show that ratios are higher in provinces outside Java and Bali and in the poorer provinces of eastern and central Indonesia, indicating a more equal distribution of midwives.<sup>104</sup> The national ratio of midwives to population has changed only marginally over time in urban areas. Urbanization has increased, and more midwives are residing in urban areas.

Different patterns emerge when one analyzes changes in the numbers and ratios for different regions.<sup>104</sup> The total number of midwives in Java and Bali did not change over time, but a shift took place between urban and rural areas (Tables 48 and 49). Rural areas had almost 30 midwives per 100,000 population in 1996, but only 27 per 100,000 in 2006 (Tables 48 and 49). In 2006, urban areas had more midwives, 25 per 100,000 population, than they had in 1996 (Tables 48 and 49). In other provinces, the ratio of midwives increased over the decade from 39 to almost 52 per 100,000 population (Tables 48 and 49). A 40% increase in the absolute number of midwives in rural areas contributed to this change, with the ratio of midwives to population also showing an increase.<sup>104</sup> These shifts may be explained by the strong emphasis of the government on placing midwives in rural areas through the village midwife program, *Bidan di Desa* (BDD), which was started in 1992.<sup>104</sup>

The main focus of the BDD program initially was to place midwives in rural villages under 3-year contracts. After the initial 3 years, midwives could renew their contract for another 3 years, but that was the maximum period. Midwives were expected to have created a sufficiently large client base by then to stay employed through the provision of private services.<sup>104</sup> Alternatively, the district health office could employ the midwives under regional PTT (*pegawai tidak tetap*: contract employee) contracts. Even during their contract years, the midwives were permitted to have a private practice, which often doubled their income. Midwives in remote and very remote areas also received a considerable bonus on top of their salaries, which could be provided by both the central and local governments. With the introduction of the *Desa Siaga*, or “alert village,” program in 2008, village midwives remain contract employees and have the option to become civil servants after their contract period. Although it is known that many have the desire to enter the civil service eventually because of employment stability and other financial advantages, little information is available on how many midwives actually enter the civil service through this program. Table 52 shows a substantial increase in the number of midwives working for private sector in 2006 than in 1996, with dramatically higher increases in urban areas as compared to those in rural areas.<sup>104</sup>

**Table 48. Distribution of Midwives in Indonesia**

Region	Level			Per 100,000 residents		
	1996	2006	Change (%)	1996	2006	Change (%)
National	71,015	79,661	12.17	35.22	36.86	4.64
Urban	17,958	27,809	54.86	30.26	31.36	3.63
Rural	47,049	51,852	10.21	37.29	40.69	9.12
Java and Bali	33,436	33,755	0.95	27.55	26.12	-5.19
Urban	9,874	15,388	55.84	23.84	25.08	5.21
Rural	23,562	18,367	-22.05	29.47	27.06	-8.19
Sumatra	22,823	24,645	7.98	53.73	54.09	0.67
Urban	4,787	7,241	51.26	46.45	48.05	3.45
Rural	18,036	17,404	-3.50	56.06	57.07	1.80
Other Provinces	14,756	21,261	44.08	39.07	51.45	31.67
Urban	3,297	5,180	57.11	43.25	42.23	-2.36
Rural	11,459	16,081	40.34	38.02	55.34	45.55

Source: PODES 1996, 2006.

**Table 49. Ratio of Doctors and Midwives by Region**

Region	Doctors per 100,000 Population			Midwives per 100,000 Population		
	1996	2006	% change	1996	2006	% change
<b>Java-Bali</b>	16.2	18.5	14.20	27.5	26.1	-5.09
Urban	39.0	34.1	-12.56	23.8	25.1	5.46
Rural	4.4	4.5	2.27	29.5	27.1	-8.14
<b>Outside Java-Bali</b>	14.8	18.1	22.30	46.8	52.8	12.82
Urban	43.2	40.9	-5.32	45.1	45.4	0.67
Rural	7.1	8.3	16.90	46.0	55.1	19.78
Remote	4.7	6.6	40.43	53.4	58.1	0.09

Source: Various years of PODES (Survey of Village Potential).

**Table 50. Average Facility Staffing of Puskesmas and Pustu in Urban and Rural Settings**

Facility	National		Urban		Rural	
	1997	2007	1997	2007	1997	2007
<b>Puskesmas</b>						
Number of physicians	1.51	1.90	1.63	2.04	1.29	1.58
No physician (%)	3.40	7.00	2.44	6.18	5.08	8.65
Number of midwives	5.85	3.69	4.99	3.78	7.30	3.51
Number of nurses	5.05	6.14	4.88	6.02	5.34	6.42
<b>Pustu</b>						
Number of midwives	0.98	0.81	1.14	1.06	0.84	0.50
Number of nurses	1.08	1.06	1.21	1.19	0.99	0.86

Source: IFLS 1997, 2007. <http://www.rand.org/labor/FLS/IFLS>.

\*Number per 10,000 population.

**Table 51. Average Facility Staffing of Puskesmas and Pustu by Region**

Facility	National		Java and Bali		Sumatra		Other Provinces	
	1997	2007	1997	2007	1997	2007	1997	2007
<b>Puskesmas</b>								
Number of physicians	1.51	1.90	1.68	1.96	1.19	1.85	1.09	1.62
No physician (%)	3.4	7.0	1.5	5.9	2.0	6.8	15.9	11.3
Number of midwives	5.85	3.69	5.76	3.44	6.33	5.28	5.62	3.18
Number of nurses	5.05	6.14	4.58	5.60	6.16	7.16	5.84	7.61
<b>Pustu</b>								
Number of midwives	0.98	0.81	1.06	0.76	1.13	1.17	0.44	0.21
Number of nurses	1.08	1.06	1.02	1.09	1.16	1.08	1.16	0.89

Source: IFLS 1997, 2007, <http://www.rand.org/labor/FLS/IFLS>.

\*Number per 10,000 population.

**Table 52. Distribution of Private Midwife Practices in Indonesia**

Region	Level			Per 100,000 population		
	1996	2006	Change (%)	1996	2006	Change (%)
National	17,278	44,616	158	8.57	20.64	140
Urban	988	18,684	1,791	1.66	21.07	1,169
Rural	16,290	25,932	59	11.45	20.34	77
Java and Bali	8,459	27,057	220	6.97	20.95	200
Urban	733	12,627	1,623	1.77	20.58	1,062
Rural	7,726	14,448	87	9.66	21.28	120
Sumatra	6,049	12,554	108	14.24	27.55	93
Urban	187	4,393	2,249	1.81	29.15	1,510
Rural	5,862	8,161	39	18.22	26.76	46
Other Provinces	2,770	4,987	80	7.33	12.07	64
Urban	68	1,664	2,347	0.86	13.56	1,476
Rural	2,702	3,323	22	8.96	11.43	27

Source: PODES (*Potensi Desa*) survey from Indonesia's Central Bureau of Statistics (BPS) 1996, 2006, <http://www.rand.org/labor/bps/podes/>.

## MLHW typology

### Nurses

#### Demographics/Background

Indonesia has increased its capacity to produce health workers during the last 2 decades. For example, in the 1990s there were 183 *Sekolah Perawat Kesehatan* (SPK) and 76 diploma (D3) nursing schools. There are now some 682 nursing schools altogether producing some 34,000 nurses each year.<sup>107</sup>

However, there is still a serious shortfall of qualified nurses in Indonesia, with an estimated 50 nurses per 100,000 population, which is lower than international standards.<sup>108</sup> Nurses are the largest segment

of the health workforce in Indonesia although estimates of their numbers vary widely. The professional organization PPNI, or Persatuan Perawatan Nasional Indonesia, maintains that there are almost 800,000, but the National Institute of Health Human Resources Development and Empowerment indicates that there are 308,306 nurses.<sup>109</sup> Such discrepancies may be explained in part by the lack of central registration system for nurses, by the fact that registration is voluntary with the professional associations, or by incomplete information in the administrative databases maintained by the Ministry of Health.<sup>107</sup> It may also be a case of reporting different things than those ever registered on one hand and those known to be alive and practicing on the other.

We were not able to gain access to detailed information about country and sub-national level socio-demographic characteristics of nurses based on DHS or other representative surveys in Indonesia, and thus this is an aspect needing additional investigation in the future.

## Recruitment and Training

Nursing and midwifery entry levels are variable and plans for raising it on the basis of standards need to be explicitly developed and implemented.<sup>103</sup> Nurse training may include an SKP training leading to a Nurse (*perawat*) Graduate of a *sekolah perawat kesehatan* (SPK). Students enter to SKP at the end of junior high school, and therefore the SPK training is regarded as equivalent to senior high school. Alternatively, students can pursue an *akademi perawatan*, which students enter at the end of senior high school; or *fakultas ilmu keperawatan*, a university-level course at the first-degree level; finally, a small number are second degree-level graduates as well. All these institutions must be licensed by the government.<sup>104</sup>

The majority of nurses (60%) are educated only to the SPK (Sekolah Perawat Kejuruan: Nursing School: high school equivalent) level, 39% have a diploma (D3) and 1% are university graduates (S1); these latter two groups typically move into teaching nursing soon after completing their SPK training period. It is clear therefore that nurse educators have little clinical experience in the field and that the majority of direct clinical care is delivered by the least qualified nurses. Furthermore, there appears to be little differentiation between clinical roles of nurses with different educational qualifications.

Thus clearly pre-service and in-service training are lagging in Indonesia, especially for nurses and midwives. Currently, the regulatory framework governing the quality of these activities is weak. Of particular concern is the rapid growth of new schools without a proper credentialing process. Although reforms and increased investment to address the quality of health professional institutions are on-going, results in the form of increased quality cannot be expected in the short term. Not only is pre-service training lagging, but internships to help students obtain practical clinical skills are in short supply and of poor quality.<sup>104</sup>

Recently, with the aim to improving the quality of nurses and midwives alike, the government is requiring an upgrading of D1 training to D3 level. However, it is clear that in order to implement this new policy, there will be a need to provide more D3 training institutions and qualified teachers. Schools are encountering difficulties in attracting personnel with good clinical backgrounds and field experience to train as teachers. Moreover, there seems to be too much emphasis on the academic qualifications of the teachers and insufficient attention given to their pedagogical skills.<sup>107</sup>

## Accreditation/Licensing bodies

Various aspects referred to accreditation and licensing are common to nurses and midwives, although we will try to identify specifics for each cadre, as far as it is allowed by the information sources obtained. A recent study on training and development needs of nurses in Indonesia found that no central registration of nurses exists, making impossible regulation of the profession, enforcement of quality standards and ensuring accord between level of training and clinical activities undertaken.<sup>108</sup>

The same study found that many nurses, and also midwives, do not have a formal job description, which means that professional and competence boundaries may be exceeded, especially where there is pressure on services and limited resources. It also limits the effectiveness of the individual performance assessment (IPA) system.<sup>108</sup>

Like all government employees, nurses are required to have an annual IPA as a mechanism by which quality standards can be monitored and maintained through continuing professional development. However, the structure and framework of these IPAs varies greatly, which may affect nurses' understanding of their skill levels and development needs.<sup>108</sup>

A recent World Bank report on Indonesian health workforce concludes that currently, serious quality concerns remain about the education system itself and the subsequent certification and accreditation of health workers, and that a serious shortfall in capacity also exists.<sup>107</sup> The report also emphasizes that although some systems have been established, such as systems to accredit medical, midwifery, and nursing schools (whether private or public), accreditation is not done by an independent body, and professionals capable of performing accreditations are in short supply. The standards themselves are also deficient, making accreditation very difficult, and accreditations that have been conducted are not published.<sup>108</sup> An appraisal of current governance set-up and accreditation and certification processes of schools and graduates noted not only the absence of standards but also the lack of staff and institutions that can conduct proper accreditation and certification according to nationally agreed norms. Thus not surprisingly, there are wide variations in the quality of graduates and subsequent service provision.<sup>107</sup>

Regarding the decentralization process and its effects on regulation of the health workforce, the decentralization of government authority in 2001 came with unclear rules regarding responsibilities in regulatory systems and the situation has since worsened because some local governments now issue permits/licenses to schools to operate without obtaining a license from the DIKTI, the Directorate General for Higher Education.<sup>107</sup>

Upon graduation, students receive a certificate from their schools, but there is no reference to national competency standards. Then, on the basis of this certificate, the provincial health office issues a license as a midwife or nurse (*Surat Izin Bidan-SIB* and *Surat Izin Perawat-SIP*). Registration with IBI (Indonesian Midwives' Association) or PPNI (Indonesian National Nurses' Association) is not mandatory. However, when a midwife or nurse requests a license to open a private practice from the local government, he or she has to obtain a letter of recommendation from IBI or PPNI. There are currently no standards for assuring continuing education or license renewal once a license has been issued.<sup>107</sup>

## Training of trainers

A consistent and clearly regulated system for the training of graduated nurses and midwives is lacking, and technical capabilities, career advancement and further training opportunities for senior health workers are reportedly inadequate.<sup>103</sup> On the other hand, due to the lack of clear incentives for senior nurses and midwives to dedicate more time and efforts to continuing training activities, these are not

perceived as critical aspects in the provision of a quality health care.<sup>103</sup>

## Workplace

Once nurses are graduated, they can work for the public or private sector, in complex referral facilities or in primary care facilities such as health posts and health centers, on contract or as permanent civil servants. Details of their geographical distribution are shown elsewhere in this report, but primary level health facilities mostly rely on nurses and midwives as the main or unique health care providers.

## Equipment and supplies

We did not find detailed and verified documentation or studies explicitly related to adequacy in the provision of drugs, equipment and supplies to nurses or to the facilities where they are deployed. A WHO report stated that in general, infrastructure support and working conditions are less than optimal in the countries of the region including Indonesia.<sup>103</sup> This issue is surely important to document whether or not they are receiving the necessary support to perform adequately their activities, and thus it needs to be addressed in the future.

A World Bank study on the situation of health workforce in Indonesia found that the availability of vaccines at *pustu* improved during the 10 years from 1997 to 2007.<sup>107</sup> In 1997, only 29% of *pustu* had measles vaccines and 33% had tetanus vaccines in stock. In 2007, the percentages almost doubled, and more than half of *pustu* now have measles and tetanus vaccines. However, tuberculosis treatment has worsened since 1997. In 1997, 53% of *pustu* provided tuberculosis (TB) treatment, but only 30% did so in 2007. It is unclear why this situation has worsened. Possible explanations include fewer staff at *pustus* than in 1997, reduced availability of drugs, lack of operating funds after decentralization—even though capitation funds from *Askeskin /Jamkesmas* could be used for health promotion—and government prioritization of maternal health as a main intervention, which may have diverted attention from other public health programs, such as the one to counter TB.

## Responsibilities

Regarding development and implementation of guidelines for responsibilities within the regulatory system, they were not well delineated when government authority was decentralized in 2001. This situation has since worsened because some local governments now issue permits or license to schools to operate without obtaining a license from the Higher Education Directorate of the Ministry of National Education.<sup>107</sup> This rather vague regulatory framework leaves too much space for diluted responsibilities of nurses and midwives, and they frequently have to perform health care activities not formally assigned to them, particularly in the rural and remote areas, where they can be the only health providers available.

## Health Worker Performance

Performance of nurses and other health workers in Indonesia has been recently been emphasized by the government as a critical component in the process of providing quality health care to Indonesians.

The provision of health facilities has improved remarkably, but tackling the diverse factors determining health workers performance and thus quality of care provided is still a task largely to be accomplished in Indonesia. Recent reports of the World Bank address this issue, and their main findings are presented in



the following sections along with their possible associations with the reforms implemented.<sup>104, 107, 109</sup> Results of additional research are also summarized.

There are several initiatives focused on addressing the quality and performance issues by improving the link between job description and performance for nurses and midwives. In 2001, the Directorate of Nursing Services, WHO and Gadjah Mada University (UGM), developed together a model for performance improvement of nurses and midwives, which later became known as Development of Performance Management (DPM). This model was implemented in five districts in Java and Bali. An evaluation in 2003 showed that there was an increase in performance of nurses and midwives after they joined DPM activities.<sup>107</sup> A second example is the Clinical Performance Development and Management System for Nurses and Midwives in Hospitals and Community (CPDMS), implemented by the Ministry of Health, with funding from WHO, the World Bank and ADB. It is a system to promote the development of a quality control system for nursing and midwifery services. By 2004, the CPDMS had been tested and implemented in hospitals and health centers in 35 districts in nine provinces in Indonesia. The approach focuses on providing clear standards and the dissemination of those standards to providers; adapting job descriptions to local circumstances; clear performance indicator-based monitoring systems and group discussions. It further contributed to the review of the midwifery diploma curriculum in 2002.<sup>107</sup>

Regarding the possible association between increase in health workers deployment and clinical performance, there is evidence that increasing the number of private sector physicians per 100,000 population is associated with improvement in the average diagnostic ability of all facilities. The changes in prenatal care, child curative care, and adult curative care scores from diagnostic and treatment vignettes are all positively correlated with changes in the number of private physician practices in the community. These relationships are statistically significant for prenatal and child curative care.<sup>104</sup>

A particular concern about the growth in the number of private physician practices is that they may have a detrimental effect on the quality of care in the *puskesmas*. However, there is no clear evidence indicating that dual practice opportunities lead to decline in the diagnostic and treatment abilities of health care workers in the *puskesmas*. The diagnostic ability of health providers available in the *puskesmas* did not deteriorate with growth of the private sector. Although this is a positive finding, it does not mean a conclusive cause-effect association, and further study of physicians' use of their time in public and private services is important for a more complete understanding of the costs and benefits of dual practice in Indonesia.<sup>104</sup>

The diagnostic as well as the treatment practices of doctors for prenatal care is rated less highly than those of midwives, based on analysis of detailed vignette scores. Only 28% of doctors checked a patient's blood pressure and fewer than 6% checked for protein in urine during a prenatal visit. Much of the training efforts of the past decade have been focused on improving midwives. Nevertheless, on-going quality concerns exist regarding midwives' ability to provide care and accurate diagnoses.<sup>104</sup> Given that the use of midwifery services has increased more than use of any other service, particularly among the poor, further quality improvements at this provider level are still necessary, despite their performance advantage over doctors and nurses.<sup>104, 109</sup> There is little difference between midwives' practices and *puskesmas* in terms of prenatal care; prenatal care provided by private nurses shows rather low quality scores. Private physicians compare favorably to *puskesmas* health workers when it comes to child curative care, and yet, as with prenatal care, the overall scores of all types of service providers are on the low side. For example, as part of the child curative care vignette, an indicative question is whether the health worker asks about the nature of the stool when a child has diarrhea. Only 42% of *puskesmas* health workers and 43% of private physicians indicated that they would ask this

question, and even fewer private nurses and midwives would do so. Oral rehydration fluids are administered by 79% of *puskesmas* and *pustu* health workers and by 74% of private physicians, but by only 41% of private midwives.

Differences between *puskesmas* and private physicians are less pronounced for adult curative care. Nurses compare more favorably on this vignette than on others, with midwives scoring the lowest in this care category. Overall adult care has improved marginally, in line with improvements in prenatal and child care. Further analysis of average vignette scores by competency category (in quintiles) indicated no major differences in average quintile vignette scores between public and private practitioners, but all improved over time. At the same time, even for the highest competency category, average scores were only above 90% for child curative care.

Private practice physicians appeared to focus less on providing public health services, such as measles immunizations for children and tetanus for pregnant women, in 2007. Fewer than 12% of physicians had vaccines available in their private practices, whereas more than 22% did in 1997. Tetanus availability at midwives' private practices remained at just under 60%, which is much better than for physicians but still far from complete coverage. Overall public health functions and quality of public health interventions appear to have decreased and require urgent attention, not only from the central government but also from local governments.<sup>104</sup> Tuberculosis treatment services have been reduced sharply in private settings and *pustu* (auxiliary health centers), from more than half of all *pustu* and 56% of private physicians in 1997. In comparison, more than 95% of *puskesmas* continued to provide tuberculosis treatment in 2007.<sup>104</sup>

Of note, a study to focus on quality variations by clinical setting, geographic region, and household wealth in Indonesia was performed recently using data from a representative cross-section of public and private outpatient health care providers, in an attempt to describe variations in prenatal, child, and adult care quality. Quality was measured as knowledge about clinical guidelines in this case. Public health centers offered above-average-quality prenatal care, and private physicians provided high-quality curative care. Private nurses offered below average care, as did most providers in the more remote regions of Outer Java-Bali. It was found that the poor and wealthy have access to the same levels of quality; however, the poorest women reported receiving fewer prenatal procedures. Recommendations derived from this study include improving the professional development of nurses in private settings, testing quality improvements in Outer Java-Bali, and investigating wealth disparities in quality received.<sup>97</sup>

Overall quality of services provided by public and private facilities and freestanding practitioners has improved over time in all provinces for prenatal care, child curative care, and adult care. However, specific clinical performance improvements, measured as ability to diagnose and treat, have been marginal, and overall quality remains low, with health workers only responding correctly to about half of the standard questions and procedures in the diagnostic vignettes presented in the most recent Indonesia Family Life Survey (IFLS).<sup>104</sup>

## Cost Effectiveness

Although its importance for informing policy decisions on the effects of programs based on nurses as mid-level health providers is self-evident, we could not find formal economic studies assessing their cost-effectiveness in Indonesia.

### Supervision and monitoring

Overall, technical supervision of nurses' activities and the programs they are involved in is considered poor, with senior nurses/midwives lacking appropriate developmental approaches to support continuous quality improvement of nursing/midwifery practice, and to encourage motivation, and there are few opportunities for strengthening technical supervision capacity.<sup>103</sup>

A recent study was performed at district level to describe in detail the stock of health facilities and health personnel and to estimate the funds spent on health care since decentralization starting, and it also describes supervision of the allocated staff.<sup>105</sup> Fifteen districts in Java were included. The study found that the common pattern of health facilities in most districts on Java includes a public hospital, one or two (usually smaller) private hospitals and three or four small private facilities offering inpatient and outpatient obstetric services to women and their young children. At the district level there are also private outpatient treatment clinics and numerous solo-provider private facilities for outpatient services; the providers are various, including doctors, nurses and midwives, some of whom are full-time private practitioners and others part-time in addition to their public sector roles. After they were established in public health facilities, doctors, midwives and nurses also established solo-provider facilities for their own private practice. Nurses were not allowed to have private practice but actually they also opened their own private health care facilities. These solo-provider facilities, of which those for nurses are almost half, comprise the largest category of outpatient care facilities; most are not included in official statistics. Private facilities are usually staffed by nurses working outside their hours in public hospitals and health centers. These facilities operate within the law as the nurses are, on paper, under the supervision of a doctor. The supervision is usually very nominal and at a distance, for both public and private facilities. But in particular, private practitioners operate with minimal government supervision. Regulation and accreditation of facilities at which health services are provided is not well developed – to the extent that it occurs it concentrates on multiple provider facilities. There is practically no supervision or accreditation of solo-provider facilities where the majority of outpatient services is provided.

Job description in Indonesia is reportedly poorly done, making it difficult to hold the employee accountable for their duties and tasks. Although an instrument for performance appraisal does exist (DP3), its indicators are uniform, very subjective and applied to all ranks and levels. Superiors in charge of the appraisal see it as a routine and meaningless activity. Career advancement therefore remains largely automatic, based on seniority and divorced from performance, while disciplinary action that affects position and remuneration is rarely taken. Supervision is done in a hierarchical fashion and serves the purpose of capacity building as well as standard monitoring, but, as it is not standardized, it depends on the individual and the quality of supervision varies widely.<sup>107</sup>

### Remuneration

Monthly and hourly salaries of public doctors, midwives and nurses appear to compare favorably with those of other workers of similar education, but incentives are needed for them to provide quality services to the poor. Given that public doctors can significantly complement their public salaries by practicing privately, it is hard to determine whether current public wage levels are adequate.<sup>98</sup> A 1994

review of the health sector workforce estimated that private practice accounted for about 79% of total income for specialists in urban areas and varied from 25 to 70% for rural general practitioners in outer islands (non-Java/Bali). Given that the poor also use private sector healthcare, albeit less than the rich, doctors (private and public) need incentives to provide quality services to the poor. The possibility of nurses and midwives obtaining the same proportion of their incomes from private practice is much lower as they are generally deployed in poorer areas of the country, although there is less information on this issue for these health cadres.<sup>98</sup>

### Career Progress (professional advancement)

In the SEARO regional WHO report on nursing and midwifery workforce management, country representatives including Indonesia reported that conditions and capabilities for implementing a sustained and successful process of lifelong learning were far from optimum. Specifically, problems in the didactic nature of teaching, inadequate standards, lack of competence-based education, practice, poor research skills, infrastructure and funding, and a weak culture of, and opportunity for, continuing education, were related with no real basis for technical supervision and on-going professional development.<sup>103</sup> Although Indonesia has a continuing education policy framework, this was reported to be inadequately implemented, and a major issue is that lack of consistent interest among nurses and midwives in their own continuing education, lack of recognition of its importance and no formal time allocation for continuing education.<sup>103</sup> There are relatively few opportunities for nursing and midwifery career advancement. Budget constraint is the most common reason given for inadequate specialized training and salary recognition. Senior management and policy positions require a medical degree or higher-level public administration experience and qualifications, precluding nurses and midwives advances to senior positions in the wider health system.<sup>103</sup>

Efforts of Indonesian health sector to promote professional advancement have been performed and they need to be acknowledged. Professionalizing the management of human resources is also a key objective in the *Healthy Indonesia 2010* strategy. It stresses the importance of re-examining human resource management and then strengthening management practices to improve effectiveness and efficiency. This includes defining clear roles and responsibilities for health workers and their managers, developing explicit job descriptions and policies on recruitment, deployment, education, training evaluation, promotion, incentives and career development. The strategy acknowledges that with decentralization, each administrative level requires new competencies and skills. At the provincial and district level, new skills were required for planning, program management, decision making and problem solving; all functions initially performed by the central government.<sup>107</sup> Effective implementation of these measures however, faces several challenges that are yet to be successfully overcome.

### Retention

Retention of all health workers in neediest areas of Indonesia remain one of the main challenges of for improving access to quality health care in Indonesia, particularly since decentralization.<sup>107</sup> In contrast with its official approval of dual practice for doctors and midwives deployed at rural and remote areas, the government has not allowed nurses to earn additional incomes through opening of their own private practices. Despite current interest in identifying incentives able to retain nurses in primary level facilities located in underserved areas, there is no a defined package of attraction/retention interventions, and a sustained implementation of a carefully planned retention package that includes rigorous monitoring and evaluation is still a pending task in the country health strategic plans.

## Key Challenges

Through this case study several challenges have been identified that need to be effectively faced by the Indonesian health sector. Only in this way their efforts to provide effective public health interventions based on MLHW and particularly nurses will reach a measurable impact on performance of the health system (including an improved deployment of capable and motivated MLHW), and ultimately on health indicators at national and sub-national level.

Training, licensing, certification and recertification, responsibilities assignment, supportive supervision, quality of care assessment, monitoring and evaluation, are part of several key policy actions that should be designed on the basis of good available evidence, and then be adequately implemented at scale.<sup>104</sup>

<sup>107, 109</sup>

Formal and independent evaluation efforts should be promoted, aiming at assessing impact, cost and effectiveness of interventions focused on MLHW in general and on nurses in particular.<sup>104 107, 109</sup>

Adequate implementation at scale of those interventions is a pre-requisite, as otherwise the likelihood of finding a real impact on health indicators will be minimal.

Impact evaluation, however, will need to be complemented by evaluations aimed at disentangling the underlying mechanisms of the diverse interventions, specifically their effects on health systems and vice versa and at understanding intended and unintended consequences, so as to be in a better position to make real improvements in the design, implementation and evaluation phases of the policy cycle. Such an approach will also be instrumental in understanding not only if an intervention works, but also how, for whom and under what circumstances.

Specific challenges regarding nursing workforce include the need to set up explicit entry requirements to nursing schools, improvement of training content and quality, as well as licensing and accreditation requirements. Particular attention should be paid to private sector and to rural and remote areas, where quality of training and continuous education is waiting for more decided and sustained actions.<sup>104 107, 109</sup>

Regulation of responsibilities should be more emphatically developed and enforced, while at the same time stimulating well planned task-shifting and task-sharing efforts, to allow nurses to develop health care activities not usually assigned to them, which at the same time are critical to increase high coverage of effective interventions with real potential to improve health indicators, such as maternal, neonatal and child survival interventions.<sup>104 107, 109</sup> This approach to assignment of responsibilities is particularly important in remote and rural areas, but needs to be accomplished along with other measures such as effective supportive supervision, a clear regulatory framework, and appropriate attraction and retention incentives for nurses.

Understanding both positive and negative effects of dual practice and developing a commonly agreed regulatory framework is urgently needed, particularly for nurses, who are not allowed by law to open private health facilities, but actually do so, partly because of poor salaries, and especially in poorest areas of the country.<sup>104 107, 109</sup> A coherent attraction and retention strategy should be planned and implemented, to expand the range of incentives that may allow an improved deployment of nurses who can provide thus a quality health care. Such a strategy will be most likely context-specific and thus will vary in its individual components from place to place at sub-national level.

Comparative cost-effectiveness of public, private and mixed interventions focused on MLHW and particularly on nurses are urgently needed to weigh the relative importance and the role of these

approaches in the attainment of an increased and equitable health care access, as well as their impact on health workers and health system performance. Such studies should also be complemented by approaches that allow understanding underlying explanatory mechanisms.

## Midwives

Doubtless the most prominent maternal health provider in Indonesia is the midwife, and although it must be acknowledged that physicians and nurses have also a key role to play in maternal health, the most prominent health service provider are midwives, who have reached about 80,000 deployed at country level.<sup>109</sup> Most of these midwives were employed and trained under the Village Midwife Program (Bidan Desa: BDD) Program.<sup>109</sup> Recently, the program no longer receives budgetary support from the central government, particularly for training large numbers of midwives, and the payment of contracts has been shifting progressively between the center and districts.<sup>107</sup> The intent of the BDD program was to provide a midwife in every village but this has not yet been achieved.<sup>107</sup>

## Demographics/Background

We have not found studies addressing background information and demographic characteristics in representative samples of midwives. Description of geographical distribution and characteristics of workplace are shown below.

## Recruitment and Training, Accreditation/Licensing bodies

In brief, there are 2 categories of midwives in Indonesia: D3 midwives that hold a 3-year diploma in midwifery obtained from a midwifery academy or polytechnic, and 280 PPB/A midwives that are graduates from a 1-year midwifery education program, usually following a 3-year nursing certificate (they also known as village midwives).<sup>110</sup>

From 1989 to 1996, the government Implemented the Bidan Desa (Village Midwife) Program or BDD Program.<sup>89</sup> It consisted of a one-year basic program for graduates of a junior high school nursing program leading to a health certificate referred to as Diploma-1 or D1. From 1996 onwards a three-year post-high school Diploma Program (D3) replaced this program for midwives, which trained about 59,000 midwives who were mainly deployed for rural practice.<sup>110</sup>

The BDD Program emphasized strongly on placing midwives in rural areas. It was focused initially on placing midwives in rural villages under three-year contracts. The push for rapid deployment of midwives compromised candidate selection and the quality of training.<sup>111</sup> Moreover, the village midwife was only required to perform 15 deliveries under supervision, and some of those were on models. This compared to the 50 deliveries older midwives had performed during their training. Midwife training also did not include education in client interactions, which is considered a significant contributor to client satisfaction and perception of quality.<sup>109</sup> In 1997, the government and donors began a series of initiatives to increase skills with the introduction by the government of in-service competency-based training on skills such as normal birth and basic emergency obstetric care. Donors supported training in lifesaving skills (Mother Care project), training staff at midwifery schools and developing supervision skills.<sup>109</sup> The government of Indonesia changed the basic midwifery training to be a three-year post-high school program, which became known as the “D3” diploma and is now the basic level of education required for midwifery.<sup>109</sup> This change was espoused in a national congress of the Indonesian Midwives’ Association (IBI) in 1998.<sup>109</sup> IBI does not have aggregate data on what proportion of its overall



membership is trained to the D1 level versus the D3 level although, presumably, the numbers of D3 trained midwives are increasing given that this is now the normative standard.<sup>109</sup> Evaluation and program reviews have repeatedly found that midwives practicing in Indonesia lack basic competency in core skills.<sup>109</sup>

A recent study performed in two districts of Java to primarily examine determinants of maternal mortality and to assess the effects of programs aimed at increasing the coverage of births attended by skilled health personnel found that most midwives perform several tasks that are beyond their original responsibilities, such as providing nutrition advice and immunizations and actually attend few births, raising the disturbing concern that their capacity to manage complications and recognize the need for referral may be compromised.<sup>112</sup>

Regarding academic training centers, the Ministry of National Education in 2008 reported that there were 595 schools offering midwifery training. However there are well-grounded questions regarding their performance. For instance, there is evidence that no national standard for the training curricula is established, and graduates do not take a competency test prior to licensing. Therefore the quality and skills level of many of the new graduates is questionable.<sup>107</sup> Likewise, in a 2008 review of midwives in Aceh, East and Central Java, 129 midwives indicated that their pre-service training at midwifery schools was not in compliance with an established and standardized curriculum.<sup>113</sup>

On an encouraging note, there are pilot programs underway in West Java where graduates can register with the provincial health authority but cannot practice at the district level until they have passed a competency exam administered by IBI.<sup>109</sup> Hopefully these initial efforts will be expanded and adequately implemented across the country.

## Training of trainers

Overall the opportunity of midwifery trainers receiving a systematically planned and standardized training is very limited. Thus, not surprisingly, it has been found that the midwifery educators' clinical skills were rather sub-optimal and out of date, training equipment was old and in need of repair, and there was a significant shortage of textbooks.<sup>114</sup> Moreover, as stated by midwifery academy staff in Yogyakarta, there are currently too few competent instructors available for pre-service education and not enough practice sites for students in urban areas.<sup>109</sup>

## Workplace

Midwives in Indonesia are basically thought as the primary providers of maternal health care, while remaining the key providers in almost all strategies that have been implemented. However, the emphasis on deploying them across the country and especially at primary care level has changed overtime. One of the most important government initiatives, the BDD program, aimed to provide a midwife in every village but this has not yet been achieved.<sup>109</sup> In 2005, data from the MoH indicated that only 40% of the 68,816 villages in Indonesia had midwives in place and in some places, such as North Sumatra, less than 10% of the 5,360 villages had a midwife. In 2006, the Indonesia health profile showed a national ratio of midwives at 49 per 100,000 population with a range from 8.9 per 100,000 in Banten to 74 per 100,000 in Papua. However, the high ratio of midwives in Papua is largely due to the remoteness of areas.

In 2006, 44,616 midwives were in private practice nationally, a 158% change from 1996 for all midwives.

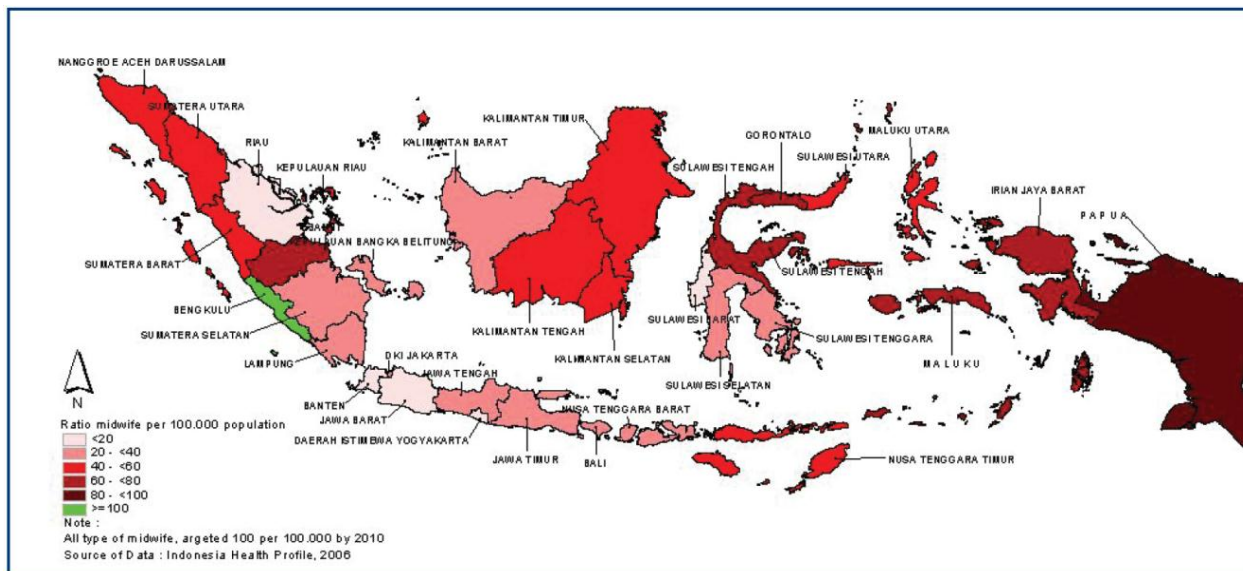
The majority of this change was found in urban areas, a 1,791% change nationally and a 2,347% change in outer islands alone.<sup>104</sup> The World Bank report found that the distribution of midwives in the public sector had decreased. Nationally, the average number of midwives at a health center was 3.7 in 2007, a decrease from 5.8 in 1997. These figures should be interpreted with caution; however, as the private-public workforce distinction is not as clear-cut in Indonesia as in other countries. The national policy allows for dual practice and many midwives in the public sector open private practices after hours. There are very few midwives who obtain their income exclusively from either their private or public practice.

### Equipment and supplies provided to them or to the facilities

Regular provision of adequate equipment and supplies at health facilities, particularly at primary level, are reportedly random, and hamper the efficiency of midwifery maternal health care provision. For instance, a study was performed in West Nusa Tenggara Province that interviewed 477 midwives operating at either a government community health center or at a polindes.<sup>109</sup> It found that only 10% had a sterilizer, 10 % had resuscitation equipment and 61 % had a midwife kit while 89% had a delivery kit. In addition, project reports from the child health sector have found facilities often have stock outs of drugs (including tetanus vaccines) and other basic consumables—such as gloves and cotton gauze. The World Bank's Workforce Study (forthcoming) found that only 54 % of private midwives had Hepatitis B in stock, and 16 % did not have an internal water source.

Studies quoted by the World Bank report on maternal care found deficiencies in availability of supplies and drugs for maternal and neonatal care.<sup>109</sup> For instance, in a 2004 study by the Kuningan District Health Office, 80 % of the midwives interviewed did not have the magnesium sulphate (MgSO4) supply recommended by the Ministry of Health. Yet another study found incomplete supplies of emergency drugs and equipment in EONC facilities in 36 health centers in the Serang district of West Java (55). Not all the health centers had emergency resuscitation equipment for newborns. Diazepam was missing in eight facilities and MgSO4 in 27 of the facilities.

**Figure 9: Ratio of Midwives to 100,000 Population by Province**



Source: Hennessy D HC, Hilan A, Kawonal Y. The training and development needs of nurses in Indonesia: paper 3 of 3. Hum Resour Health. 2006

## Responsibilities

While core competencies and resulting responsibilities of midwives are closely related to their key role in maternal health provision, particularly in primary level health facilities, any study focusing on this issue should take into account the fact that they actually perform additional tasks that include but are not limited to neonatal and child health care provision.<sup>110</sup>

As part of the decentralization process, the service delivery practices at the community health center were reviewed and revised. The Minimum Service Standards (MSS) include six areas addressing maternal health.<sup>109</sup> These service standards include lists of service delivery activities, manuals and guidelines to manage care and expected human resources necessary to implement the service. They include: (i) the practices for antenatal care; (ii) treatment of obstetric complications; (iii) delivery with a skilled provider; (iv) postnatal care; (v) family planning; and (vi) coverage of costs for poor families. A guidebook for managers lays out their responsibilities. However the MSS remain ill-defined, complex to measure and few districts actually apply them and Family planning MSS are not used.

Moreover, the policies and strategies for maternal health delineated under the Making Pregnancy Safer program now guide the majority of program interventions.<sup>109</sup> The government has outlined the following as essential components:

- continued use of village midwives to reach all women and to support the policy that all births should be attended by a skilled provider;
- renewed emphasis on antenatal care, including having the first prenatal visit in the first trimester;
- development of the emergency neonatal and obstetric basic and comprehensive systems, which rely on facilities to provide interventions;
- maternal death audits to better pinpoint the causes of death;
- promotion of exclusive and immediate breast-feeding, including within the first hour of birth;
- family planning and post abortion care; and
- Expanding the Desa Siaga effort nationwide and encompassing multiple public health objectives.

Additionally, a comprehensive list of crucial midwifery competencies and related tasks expected that were assessed in a study on their occupational profiles and development needs is enumerated below, in no particular order of clinical relevance.<sup>110</sup>

- Undertaking clinical examinations of patients
- Interpreting own patient data
- Requesting laboratory investigations/results
- Analyzing patient data
- Assessing patients' physical needs
- Undertaking technical midwifery procedures
- Recognizing and managing risk in clinical care
- Consulting with colleagues about care options
- Planning patients' discharge
- Undertaking health promotion/prevention activities
- Showing patients and their families how to do things
- Making appropriate patient referrals
- Establishing a relationship with patients
- Designing systems for patient monitoring/observation
- Applying pharmacology to practice
- Identifying areas worthy of investigation
- Liaising with other health care professionals
- Assessing costs and outcomes of procedures
- Assisting patients in making informed choices
- Appraising own and others' performance
- Critically evaluating published research
- Working as a member of a team
- Assessing patients' psychological and social needs
- Prioritizing work according to patients' needs
- Developing joint working arrangements with others
- Introducing new ideas into own clinical work
- Writing clinical, shift and other reports
- Getting on with colleagues
- Interpreting results from clinical investigations
- Collecting own patient/clinical and surveillance data
- Instructing/training students/junior members of staff
- Actively assisting in change management activities
- Inputting data into written/computerized records
- Locating/accessing relevant equipment for clinical work

The above list must be considered within the broader framework of clinical competencies and responsibilities that midwives are supposed to have attained minimally upon their licensing, so they can provide quality maternal care, which encompasses prenatal care, delivery and post-partum attention. However, there continue to be concerns over the functions and skills of midwives, especially in the performance of non-midwifery tasks. Midwives were initially intended to focus on midwifery services but they now also undertake primary preventative care, curative care for common childhood diseases, vaccinations and family planning along with their other tasks.<sup>109</sup>

## Health Worker Performance

The Indonesia government has stipulated the requirement to have an annual individual performance assessment, as one mechanism by which to rate performance of staff and, from the results, to determine reward level. Without a regular and structured clinical performance review and feedback opportunity, it may be difficult for many midwives to recognize, reflect and improve on the quality of their clinical practice and service delivery, or to identify their future development needs. As part of a study aimed at determining training and development needs of midwives in Indonesia, comparison of individual performance was also assessed.<sup>110</sup> The results indicate that the above indicated government requirement process does not appear to have any impact on midwives' perception of their current performance levels or training needs. Comparisons of the 243 midwives who had undergone individual performance assessments and the 89 who had not, on both self-reported performance ratings, and training needs, revealed no significant differences between the two groups in terms of reported performance, and only one significant difference in training need.

This suggests that the current method of conducting government performance assessments on midwives has no impact either on how midwives assess their own performance or their development needs. One explanation for this may be the relatively unstructured way in which individual performance assessments are currently conducted, with many midwives not knowing whether or not they have been appraised. Without a planned, methodical approach to professional development, it may be difficult for midwives to undertake useful reflection on their practice within an agreed skill framework.<sup>110</sup>

A quality control process in the nursing and midwifery service in Indonesia has also been established, through the design of a system called a "Clinical Performance Development and Management System for Nurses and Midwives in Hospitals and Community."<sup>107</sup>

As one study attempting to assess the professional development needs of nurses and midwives in Indonesia acknowledges, the importance and success of relevant training for midwives in Indonesia has been documented in various reports.<sup>115</sup> It illustrates how a program of training, educating and deploying midwives, which was introduced in remote villages in three districts, had the effect of increasing the number of births attended by skilled midwives from 37% to 59%, and improved midwifery management of obstetric complications.<sup>116</sup>

Likewise, an intensive in-service training program improved the performance of village midwives in three out of five key skill areas.<sup>117</sup> Where qualified midwives have been located in areas of high deprivation in Indonesia, there has been an associated rise in birth weight.<sup>118</sup> The above-cited study underlies the importance of education and training in improving health outcomes, and that it is inappropriate for midwives to discharge nursing duties as well as other health care activities that demand highly specialized clinical skills, such as dengue hemorrhagic fever, malaria, typhoid, cholera and leptospirosis.<sup>115</sup>

The Government of Indonesia and donors have consistently focused on midwives and community-based interventions to address the persistently high maternal mortality. However, the accumulated evidence would suggest that providing midwives alone is too narrow a strategy. Many women who die have been managed by a health professional before death, which can occur antepartum, during labour, delivery, or in the postpartum period. It seems clear that increasing the uptake of skilled care at delivery alone is not enough for achieving lower levels of maternal mortality. Quality of care needs also to be strongly

emphasized. The persistently high levels of maternal mortality among wealthier women who give birth with a health professional are worrying. Some of these women will have sought care too late for the midwife or doctor to be able to prevent death. However, midwives may not be skilled enough at managing complications, even when women seek help early.<sup>107</sup>

### Cost-Effectiveness

Few systematic cost-effectiveness studies have been performed to assess the impact and cost of main strategies focused on midwifery in Indonesia. One of them was focused on three in-service training programs that were carried out during 1995–98 in the attempt to improve the knowledge and skills of midwives at health facilities and those based in villages in South Kalimantan, Indonesia.<sup>119</sup> A scheme used for both facility and village midwives included training at training centers, peer review and continuing education. One restricted to village midwives involved an internship program in district hospitals. The incremental cost-effectiveness of these programs was assessed from the standpoint of the health care provider. It was estimated that the first scheme could be expanded to increase the number of competent midwives based in facilities and villages in South Kalimantan by 1% at incremental costs of US\$764.6 and US\$1175.7 respectively, and that replication beyond South Kalimantan could increase the number of competent midwives based in facilities and villages by 1% at incremental costs of US\$1225.5 and US\$1786.4 per midwife respectively. It was also estimated that the number of competent village midwives could be increased by 1% at an incremental cost of US\$898.1 per intern if replicated elsewhere, and at a cost of US\$146.2 per intern for expanding the scheme in South Kalimantan. According to the authors, it was not clear whether the training programs were more or less cost-effective than other maternal health interventions because the outcome measures were not homogeneous.<sup>121</sup>

The World Bank report on maternal health contains a full section on service charges and cost,<sup>109</sup> which can be a starting point for performing a full cost-effectiveness study of current maternal interventions focused on midwives, including the government's current policies for reducing maternal mortality are contained in the 'Healthy Indonesia 2010,' 'Minimum Service Standards,' and 'Making Pregnancy Safer' programs.

### Supervision and monitoring

Similarly to what is stated for nurses focused programs, supervision and monitoring activities are weakly designed and implemented in those interventions relying on midwives as the main health providers, and hardly complies with requirements for a supportive and effective supervision process.<sup>104, 107, 109</sup> The number and quality of trained personnel for accomplishing these tasks is insufficient, and there are not established nationwide standards that can be consistently used. This faulty supervision and monitoring process, together with demand for accomplishment of several clinical and administrative duties and unclear job descriptions, explain why midwives have been working with few opportunities for job support and learning, thereby affecting clinical performance and retention as well.<sup>109</sup> There are on-going efforts to include a well-structured supervision and monitoring process in the current policies on maternal health in Indonesia and hopefully they are going to contribute to a better performance and ultimate impact.

### Remuneration

As a result of the dual practice that is allowed in Indonesia, incomes sources of midwives most often include their salaries as public sector servants and their private practice clinical and nonclinical incomes.



A recent study conducted as part of an evaluation of the rural midwife program in Bantem Province in the attempt to understand the effect of financial incentives on the distribution of midwives and use of services, found that midwives obtain almost two-thirds of their income from private clinical practice, and that private income is clearly associated with experience and competence.<sup>120</sup>

The recent World Bank Report on maternal health states that under Ministry of Health Regulation No. 508/2007, midwives could receive IDR2.5 million per month for service in remote locations.<sup>109</sup> To enter a private practice, it was expected that a midwife would need to take a three-year D3 midwifery course after completing their PTT contract. This additional education requirement was in line with IBI's (Ikatan Bidan Indonesia or Indonesian Midwives' Association) policy recommendation of 1998 that only D3 trained midwives be allowed to have a private practice. However, PTT midwives would have to pay US\$1,391 for tuition and living costs if they wanted to complete the course. Ironically, the tuition portion of this training exceeded what they could earn at that time as a village midwife. Research on net incomes for midwives has found income difficult to quantify accurately.

As is common practice in Indonesia, public sector midwives who earn a government salary also supplement their income through private practices. Even during their contract years, midwives were permitted to have a private practice; in effect doubling their sources of income. Incomes between districts and between urban and rural locations within districts vary widely.<sup>122</sup> Private income is affected by location as those closest to urban centers face competition for services while in more rural areas, less competition allows midwives to capture a greater market share. In the most remote areas, ability to pay tends to decline because of reduced income among the population. However, overall, even in rural areas, midwives are able to capture enough market shares to earn an adequate income.<sup>123</sup> On the other hand, the IMMPACT study<sup>123</sup> found that basic salary varied depending on contract status. A civil servant (Pegawai Negeri Sipil, PNS) employee earned the most with an annualized salary of US\$1,768. Contractors for three years (PTT) who had central-level contracts earned US\$1,179 compared to contractors who had local contracts, who earned just US\$1,072. Of these earnings, base salary contributed on average 79% to the total, the additional money was earned through bonuses and reimbursement for services provided to the poor under the Askeskin program. Government salaries contributed 35% of total income, while private clinical services contributed 56% and private nonclinical services the balance of 9%. Total annual incomes, including public sector salary, private practice income and private nonclinical income varied significantly across the sample population. The mean private sector income was US\$2,508 per year but 10% of the sample had an annual income of over US\$11,000.

Of note, levels of income appear to be closely related to number of years since qualification; a midwife with 15 years of experience earns more than twice the income of a midwife with less than five years of experience (Ensor et al 2008). IBI indicates that there is a salary differential between public sector midwives who have only received a D1 degree and those who have had lengthier training and received the D3. However in the private sector, midwives charged similar tariffs and received payment, irrespective of their educational background and training.<sup>109</sup>

### Career Progress (professional advancement)

More than 90% of the nurses and midwives sampled in a study aimed at understanding factors that may influence their performance found no post-basic or continuing professional development training in the past three years, which in the global era of rapid health care development means that much midwifery

care in Indonesia may not be conducted according to evidence-based best practices.<sup>124</sup> A more recent study of midwives<sup>110</sup> in North Sulawesi, North Sumatra and East Kalimantan found that the entire sample population had training needs in all of the 40 core tasks. The authors underline that the respondents perceived themselves to have skill deficits in all the areas covered. Compounding the difficulties in training, statutory regulatory authority for nurses and midwives is lacking, and consequently there are no regulatory standards for education and clinical competence, although work is in progress to develop these authorities. Also, the vast majority of nurses and midwives (60%) have inadequate training and preparation for the role, which creates the potential for substandard care delivery.<sup>110</sup> The most recent government and donor initiative has been the development of a training program for normal delivery, Asuhan Persalinan Normal (APN). This is a ten-day training course that has four days of classroom instruction and six days of practicum. Trainees do a minimum of three supervised deliveries. The training includes the active management of the third stage of labour and newborn care. It is based on WHO clinical materials and is to an international standard. Trainees are limited to 12 to 15 in a class, and there is clinical accreditation that takes place two to six weeks after training. The National Clinical Training Network records show that 12,479 midwives have received APN training through their network, which is 14 % of the total number of midwives in Indonesia. Other organizations have also trained midwives in APN, using different trainers. Accurate data are not available, as IBI doesn't have records, even though the MoH and IBI have suggested that APN training be mandatory for all midwives.

The National Clinical Training Network, which is doing the training nationwide, has reported significant improvement in delivery skills. One local assessment of results in Cianjur and Tangerang (West Java) found that 81% of the 120 midwives trained were able to perform active management of the third stage of labour, compared to 34% of 109 midwives who had not received the training or a follow-up supervisory visit.<sup>125</sup> In three districts in NTT, 78.5% of the midwives had received in-service training in APN, and 18.6% of those same midwives had received training in how to conduct a maternal and perinatal audit. Only 11% of the midwives had received in-service training in basic emergency obstetric care and 7 % had training in lifesaving skills for maternal health. There continue to be concerns over the functions and skills of midwives, especially in the performance of non- midwifery tasks. Midwives were initially intended to focus on midwifery services but they now also undertake primary preventative care, curative care for common childhood diseases, vaccinations and family planning along with their other tasks.<sup>109</sup>

As part of supporting activities related to the Making Pregnancy Safer Initiatives, In 1997, in-service competence-based training was introduced in 1997 to teach midwives core clinical competences such as care for normal birth, basic emergency obstetric and neonatal care and post-abortion care.<sup>110</sup>

## Retention

Various financial and non-financial incentives have been implemented overtime in Indonesia to attract and retain midwives, so as to improve their continued presence in remote and rural areas. Regarding financial incentives, the government estimated that 60 to 75 % of the village midwives placed since 1994 were still in their villages, but what role salary played in their retention is unclear.<sup>126</sup> Initially, village midwives received a three-year commitment from the government to cover their salary as contract employees (PTT). This contract could be renewed twice at most, at which point they could either become a civil servant or continue in private practice. At the end of their PTT contract some village midwives moved from the village to the health center to become a civil servant at the facility, thereby leaving some villages without midwives. A 2007 initiative supported the concept of Bidan Siaga, paying incentives from the central budget for PTT midwives to practice in remote locations.<sup>109</sup>

According to the World Bank, attracting midwives to rural and remote areas has been more successful. Indonesia has implemented a number of successful strategies such as the *Bidan di Desa* program to encourage midwives to work in underserved areas. They include basically salary incentives and opportunity for establishing private practice. As a result, there are more midwives in rural and remote areas than doctors although this presents both benefits and problems. In practice, nurses and midwives are the main health care providers in most rural and remote areas because there are no doctors. At the *Puskesmas*, nurses often run the outpatient clinic, treating patients and diagnosing medical complaints, tasks they are not legally allowed to perform and for which they have not been trained. Even in less remote or rural areas, nurses and midwives start providing curative care because of the weak regulatory system, giving rise to serious quality concerns and risks for patients.<sup>107</sup>

However, midwives trained under the BDD program are moving out of their village posts.<sup>109</sup> They are becoming civil servants and working in the community health center, entering private practice, entering academia and teaching midwifery or leaving clinical services for administrative posts. Whatever the reason, the intended target of one midwife in every village has fallen short.<sup>109</sup> While the utilization of village midwife services remains an essential element of most proposed maternal health interventions, formal central-level support was supposed to end in 2007.<sup>109</sup> Government policy now states that midwives should either make the transition to local district staff or they should be established enough that they are able to stay in their villages but earn an income from private practice. However, the concept of “local district staff” is very nuanced.<sup>109</sup> Public sector health staff were “transferred” to the districts under decentralization, however, the reality is that the center retained control over salaries, conditions and hiring and firing.<sup>90</sup> In addition, the central government has been following up on an earlier promise to convert those on contract (including both PTT and local contracts) to permanent civil service status by the end of 2009. A study performed in 15 districts in Java found that the overwhelming majority of midwives were civil service (PNS) or contract (PTT) workers.<sup>90</sup> A total of 3,388 midwives were civil servants (PNS), 1,662 were contract (PTT), 209 were local contract, 164 were daily contract (a category of worker not seen in any other province but West Java) and 593 were privately employed. In 2004, there were 5,707 contract midwives in remote areas; by 2006 there were only 437 contract midwives in remote areas. In 2004, the total number of contracted bidans was 12,345 and by 2006, this had fallen to 2,505. There were 52,168 midwives employed at *puskesmas* in 2006. If we extrapolate from the trends found in Java, then approximately 56% of those midwives would be PNS and 34% would be contract midwives. The Ministry of Health has warned against interpreting a reduced number of midwives in the BDD program as an overall reduction in the availability of midwives. It is their opinion that services remain available as long as the professional is on-site, even if they are no longer part of the formal village midwife program. Retention has been viewed as a function of integration into the community and the ability of a midwife to earn sufficient income.

While integration into the community was problematic at the onset of the program, there was evidence indicating that this was not an overall problem and acceptance rates for the midwives were good a decade into the program.<sup>114</sup> Retention is also a function of job satisfaction, career opportunities, salary benefits and continued professional opportunities. In the 2003 Nursing and Midwifery Workforce Management Survey conducted by WHO, Indonesia did not score well on most of these parameters, suggesting there is significant improvement possible in the system for retaining midwives. One study found that more established midwives were reluctant to move from their villages because of family reasons and disturbance to their private practices if they moved more than one hour away. The younger midwives, who did not have as many community ties, were more inclined to consider moving.<sup>120</sup> UNICEF also found that a midwife’s marital status had an impact on retention; those midwives who either were

married or got married during their tenure were more likely to stay in the village where they were placed. IMMPACT found a paucity of midwives in the more remote areas and a high turnover rate, in part caused by the demanding and isolated professional environment.<sup>127</sup> Retention rates are also a factor of adequate mentoring and supervision and a clear understanding of role expectations. In Indonesia, “on-going lack of supervision coupled with diverse duties and unclear job descriptions meant that many midwives worked in isolation with few opportunities for job support and learning, thereby affecting retention as well.”<sup>111</sup>

## Key Challenges

There are common challenges that must be faced for placing the needed health workforce in all levels of the Indonesian health workers, but mid-level health providers doubtless constitute a key component of any strategy aimed at fighting the main health problems burdening this country. The recent report of the World Bank on the situation of the health workforce in Indonesia identifies key common challenges for doctors, nurses and midwives.<sup>107</sup>

- Shortage and Inequitable Distribution of Medical Doctors and Medical Specialists
- Low Quality of Health Professional Education and Weak System of Accreditation of Schools and Certification of Graduates
- Inadequate Health Workforce Policies and Planning
- Growing and Changing Demand for Health Care

The report also proposes key ways to face these common challenges.<sup>107</sup>

- Provide better information about the dynamics of the health workforce at the national and sub-national levels
- Modernize the planning methods for health workforce production and deployment to reflect real demand
- Include the private sector in health workers recruitment and deployment
- Limit the recruitment of publicly funded medical doctors in urban areas
- Limit the recruitment of public servants to those who have been certified according to national standards
- Limit the reimbursement of services for patients with health insurance to those services that have been provided by certified health personnel in both the public and private sector
- Modernize health workforce policies based on an evidence-based evaluation of past policies
- Modernize and improve the quality assurance—certification, accreditation and licensing—of health workers and health professional education
- Strengthen not only the clinical competence of nurses and midwives, but also privilege them for providing clinical service in remote areas (Improving their skills and legalizing their practice will improve the provision of health services in remote and rural areas)

On the other hand, the World Bank report on maternal health closing remarks states that the Government of Indonesia and donors have consistently focused on midwives and community-based interventions to address the persistently high maternal mortality.<sup>109</sup> However, the accumulated evidence would suggest that providing midwives alone is too narrow a strategy. Many women who die have been managed by a health professional before death, which can occur antepartum, during labour, delivery, or in the postpartum period. The persistently high levels of maternal mortality among wealthier women who give birth with a health professional are worrying. Some of these women will

have sought care too late for the midwife or doctor to be able to prevent death. However, midwives may not be skilled enough at managing complications, even when women seek help early. According to the report, midwives alone are not the answer to maternal mortality reduction. Indonesia has not yet identified the appropriate mix of interventions to have the necessary impact to drive down maternal mortality rates. The issues that remain are critical to resolve if Indonesia is to accelerate reduction of maternal mortality. This report proposes the following issues as key midwifery challenges to be considered in Indonesia:

- Addressing the human resource gap. Underutilization of midwives for normal delivery care and underutilization of family practice doctors for maternal health in general need to be redressed;
- Making emergency obstetric care more available, particularly for poor women when they arrive at public hospitals. This would necessitate more rigorous implementation of existing emergency obstetrical care policies;
- Enhancing the linkages between the community-based delivery facility (such as a village midwife or a private midwife facility) and hospital services. The question is how to improve coordination such that the timing of referral, the reception of the referred patient and the time to management is shortened, and the quality of care by the hospital is improved;
- The quality of care throughout the system, starting with providers and including all types of facilities, is standardized through accreditation, certification and sanction by professional organizations in order to improve quality; and
- Better utilization of the opportunities present under the national health insurance plan to develop incentives for providers to attend to the needs of the poor and near poor and improved utilization of the program by eligible clients.

In addition, there is an emerging consensus that Indonesia needs to make political and programmatic changes to have an impact on maternal mortality. Four areas identified for priority action, together with suggested policy areas for research, review and implementation are as follows.<sup>109</sup>

- Improving coordination between public and private sector services at provincial and district levels:
  - Increase research into near miss and maternal death for a better understanding of the local contributing factors.
  - Use this analysis to determine whether factors such as access to SHI, ANC, and place of delivery had an impact on outcome;
- Strengthening coordination between community-based services and hospital services:
  - Improve vital statistics registration, particularly for deaths among women of reproductive age;
  - Address the unmet need for access to emergency obstetric care among the large majority of the population; and
  - Conduct a hospital assessment for maternal health to identify barriers to care within the facility context;
- Reducing financial barriers to utilization of maternal health services:
  - Review the social insurance coverage amounts to expand what is reimbursed and to cover the true cost of having a delivery with a skilled provider; and
  - Review re-imbursement mechanisms in the case of referral upwards to a hospital for complications;
- Improving clinical skills and quality assurance:
  - Improve the quality of the skilled provider, particularly the village midwife by building on existing initiatives (such as Bidan Delima) and linking quality of care to accreditation and certification; and

- Look at the implementation of the comprehensive emergency obstetric services to find areas of improvement.

## Lessons learned and policy implications

Several decades of efforts dedicated to improving the health status of Indonesian have been hampered by diverse weaknesses of the Indonesian health system, which should be overcome if strategic planning of human resources is going to be successful and have a measurable impact in population health status.

Retention of managerial, administrative and economic responsibilities by the central level of the MOH led to erratic policies of HRH deployment at local level, frequently guided by national staffing standards that do not necessarily reflect local needs.

Dual practice is accepted in Indonesia for doctors and midwives (but not for nurses), on the premise that it may work as a retention incentive. However, weak accountability mechanisms for avoiding absence of health workers from public health services during working hours reportedly impacts public sector access, efficiency, and overall health system and out-of-pocket costs.

Although some systems have been established, such as that which accredits medical, midwifery, and nursing schools, there are not clear rules and standards for assuring an accreditation process performed by an independent body.

At the same time, private institutions producing large numbers of physicians, midwives, and nurses are growing rapidly with little oversight over their quality.

Although the private health sector has grown in scale, oversight by the public sector remains very limited.

The changing disease patterns (rapidly emerging non communicable diseases and injuries, while communicable diseases continue to spread and maternal and child deaths are still high in poorest areas) and reemerging health issues such as polio, HIV/AIDS, and avian influenza are likely to require a different skill mix of health workforce.

The HR information system lacks managerial and technical capacity and face frequently budgetary constraints. This situation, together with voluntary registration of nurses and midwives, makes the HR information system highly dysfunctional and unable of providing updated and reliable information on health workers (particularly nurses and midwives), let alone on its national and local distribution.

A recent government decision to offer contract nurses and midwives permanent posts as public civil servants seems to have increased the density of such health cadres, but mostly in urban areas. The absence of a reliable information system makes difficult to trace regional and local variations associated with this initiative.

Pre-service and in-service training of nurses and midwives is lagging behind in Indonesia. Currently, the regulatory framework governing the quality of these activities is weak. Of particular concern is the rapid growth of new schools without a proper credentialing process.



No central registration of nurses and midwives exists, making it impossible regulation of the profession, enforcement of quality standards and ensuring agreement between level of training and clinical activities undertaken.

Although some regulatory systems have been established, such as systems to accredit medical, midwifery, and nursing schools (whether private or public), accreditation is not done by an independent body, and professionals capable of performing accreditations are in short supply.

The decentralization process came with unclear rules regarding responsibilities in regulatory systems and the situation has since worsened because some local governments now issue permits/licenses to medical schools to operate without obtaining a license from the Directorate General for Higher Education.

Nurses are often required to provide services and medical treatments for which they are not trained or nor allowed to perform under the medical practice law. While core competencies and resulting responsibilities of midwives are closely related to their key role in maternal health provision, particularly in primary level health facilities, any study focusing on this issue should take into account the fact that they actually perform additional tasks that include but are not limited to neonatal and child health care provision.

Many nurses and midwives do not have a formal job description, which means that professional and competence boundaries may be exceeded, especially where there is pressure on services and limited resources. It also limits the effectiveness of the individual performance assessment.

Few systematic cost-effectiveness studies have been performed to assess the impact and cost of main strategies focused on midwifery in Indonesia. This limitation must be urgently corrected.

Overall, technical supervision of nurses' activities and the programs they are involved in is considered poor, with senior nurses/midwives lacking appropriate developmental approaches to support continuous quality improvement of nursing/midwifery practice, and to encourage motivation.

Monthly and hourly salaries of public doctors, midwives and nurses appear to compare favorably with those of other workers of similar education, but other incentives are needed for them to provide quality services to the poor.

Although Indonesia has a continuing education policy framework, this seems inadequately implemented, and a major issue is that lack of consistent interest among nurses and midwives in their own continuing education, lack of recognition of its importance and no formal time allocation for continuing education.

Despite current interest in identifying incentives able to retain nurses and midwives in primary level facilities located in underserved areas, there is no a defined package of attraction/retention interventions, and a sustained implementation of a carefully planned retention package that includes rigorous monitoring and evaluation is still a pending task in the country health strategic plans.

## Appendix 10.1

## Country Context

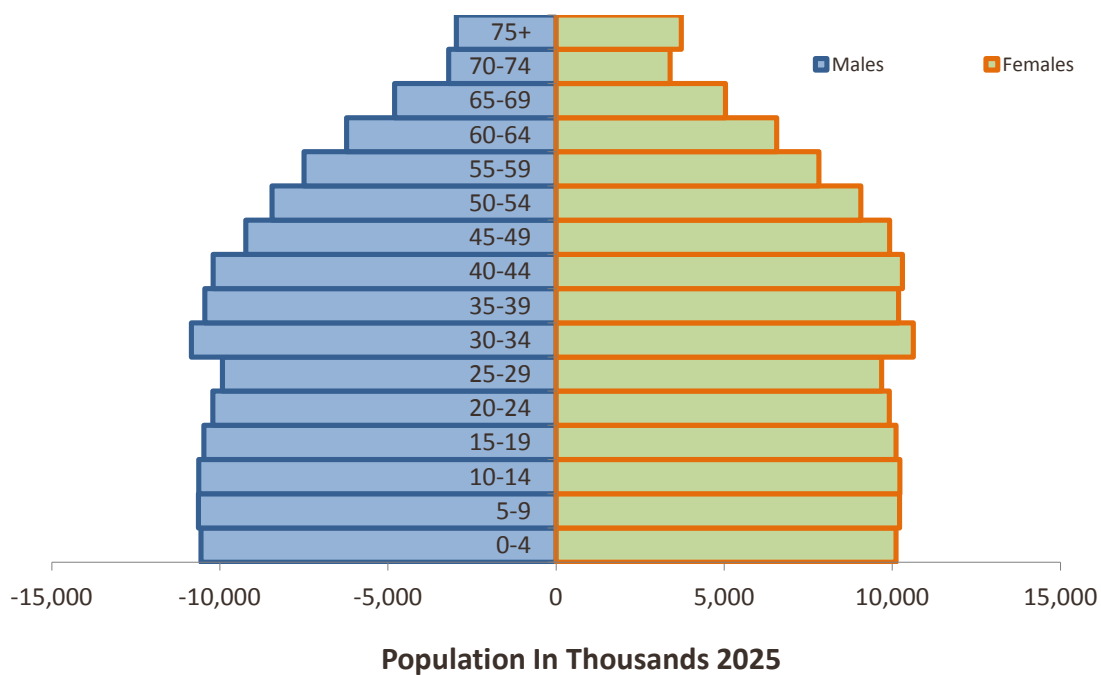
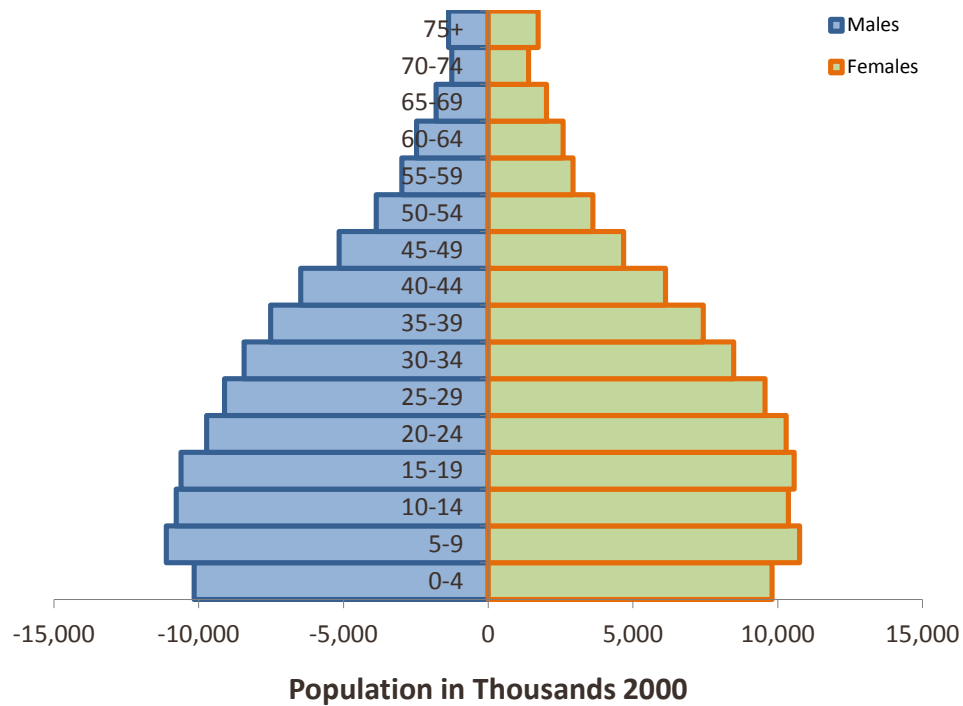
### Demographical information

According to a recent World Bank report, for the last 40 years Indonesia has faced a sustained decline in fertility, which has reduced the percentage of children (ages 0 to 14) in the population without a corresponding increase in the percentage of elderly (ages 65 and over)<sup>128</sup>. Total fertility rate has decreased from 5.6 in 1968 to 2.4 births per woman by 2003. The report underlines that as a result, the dependency ratio — defined as the ratio of children and elderly (i.e. dependents) to the working-age population — has steadily declined from over 0.8 in 1970 to about 0.5 in 2009.<sup>128</sup>

Figure 10 shows the demographic structure of Indonesia by age and sex.<sup>129</sup> More than 31% of Indonesia's population is under 15 years of age, more than half is of reproductive age and over 6% is 65 years old and over.<sup>130</sup> The urban population comprises 44% of total population (year 2010) and the estimated

annual rate of urbanization change is 1.7% annual rate of change (2010-15 est).<sup>131</sup> Moreover, Indonesia's population is growing at an annual rate of 1.49%.<sup>130</sup>

**Figure 10. Population Pyramid Indonesia**



Source: Badan Pusat Statistik, 2003

### Geographical characteristics

Indonesia is an archipelagic island country in Southeast Asia, lying between the Indian Ocean and the Pacific Ocean, and it is in a strategic location astride or along major sea lanes from the Indian Ocean to the Pacific Ocean.<sup>87</sup>

Indonesians refer to their homeland as Tanah Air Kita, which means “Our Land and Water.”<sup>132</sup> This refers to its geographical makeup consisting of 18,108 islands (based on 2003 satellite imaging data by the Aviation and Space Institute) with a total land mass of 1.91 million square kilometers connected by 6 seas covering more than 3 million square kilometers.<sup>132</sup>

Several island are remote and particularly vulnerable to natural disasters such as the devastating 2004 tsunami,<sup>109</sup> and they are reportedly underserved, with limited access to basic health services and to health workers.<sup>133</sup>

Indonesia is located in an area of the world that experiences regular natural disasters, such as earthquakes, tsunamis, floods, severe droughts and volcanic eruptions. Since the Indonesian archipelago forms a part of the Pacific Ring of Fire, it is prone to earthquakes and volcanic eruptions.<sup>88</sup>

In recent years, political, economic, religious and social crises have led to complex emergency situations in several provinces, notably Maluku, North Maluku, NTT (West Timor), Aceh, Sulawesi, Papua and Kalimantan.<sup>88</sup> These civil disturbances have contributed to an increasing number of emergencies in Indonesia in recent years. Both natural and man-made disasters have resulted in increased mortality and morbidity, as well as a growing population of displaced people.<sup>88</sup>

In an effort to prevent and mitigate damages caused by both natural and man-made disasters, the Indonesian government has established a coordinating body, called BAKORNAS at central level, and SATKORLAK at provincial level.<sup>88</sup> Thus for Emergency Response and Preparedness, there is a well-defined political structure linked with the health system (Table 53).<sup>88</sup>

Table 53. Structure of the Indonesian coordinating bodies for emergency response and preparedness			
Political Structure		Health Structure	
Level	Position	Level	Position
Central (Pusat)	Government of Indonesia (Pemerintah Indonesia)	Ministry of Health (Departemen Kesehatan)	Minister of Health (Mentri Kesehatan)
Provincial (Propinsi)	Governor= Gubernur	Provincial Health Office (Dinas Kesehatan Propinsi)	Head of Provincial Health Office (Kepala Dinas Kesehatan Propinsi)
District / Municipality (Kabupaten)	Head of District / Major= Bupati / Walikota	District Health Office (Dinas Kesehatan Kabupaten)	Head of District Health Office (Kepala Dinas Kesehatan Kabupaten)
Subdistrict (Kecamatan)	Head of Subdistrict= Camat	Health Center (PUSKESMAS)	Head of Health Center (Kepala PUSKESMAS)
Source: <a href="http://www.expatriat.or.id/info/overview.html">http://www.expatriat.or.id/info/overview.html</a> - THE%20LAND			

## Socio-political profile

The Republic of Indonesia was founded in 1945, after a long period of Dutch colonial rule and Japanese wartime occupation.<sup>134</sup> Upon its foundation, a centralized form of government (or unitary state) was established, in order to unite a people of many different ethnic, religious and cultural backgrounds spread across thousands of islands.<sup>134</sup>

Since 1998, Indonesian political and governmental structures have undergone major reforms. Four amendments to the 1945 Constitution of Indonesia have revamped the executive, judicial, and legislative branches.<sup>135</sup> The 2004 presidential election was the first in which the people directly elected the President and Vice President.<sup>135</sup> The President may serve a maximum of 2 consecutive 5-year terms. Post-Suharto Indonesia has made the transition to democracy, and power has been devolved away from the central government.<sup>89</sup>

The highest representative body at national level is the People's Consultative Assembly (MPR).<sup>135</sup> Its main functions are to support and amend the constitution, inaugurating the President, and formalizing broad outlines of state policy. It has the power to impeach the President.<sup>135</sup> The MPR comprises 2 houses; the People's Representative Council (DPR), with 560 members, and the Regional Representative Council (DPD), with 132 members.<sup>135</sup> The DPR passes legislation and monitors the executive branch; party-aligned members are elected for 5-year terms by proportional representation. Reforms since 1998 have markedly increased the DPR's role in national governance. The DPD is a new chamber for matters of regional management.<sup>135</sup>

The country has seen great turmoil in recent years, having faced the Asian financial crisis, the fall of President Suharto in 1998 after 32 years in office, the first free elections since the 1960s, the loss of East Timor, independence demands from restive provinces, bloody ethnic and religious conflict and a devastating tsunami in 2004.<sup>89</sup>

Indonesia faces demands for independence in several provinces, where secessionists have been encouraged by East Timor's 1999 success after 25 years of occupation.<sup>89</sup>

Indonesia's political outlook for the immediate short-term seems relatively stable, according to the Economist Intelligence Unit December 2010 Report.<sup>90</sup> However, continued reforms to address weak institutions such as the judiciary, corruption, collusion, and lack of transparency in the political-policy arena are still very much needed and demanded. At the same time, there appears to be a growing sense of frustration among segments of Indonesian society over the slow pace of reform, and it seems evident that politicians will need to manage appropriately current and future public expectations of growth and reforms,<sup>103</sup> paying genuine attention to governance and accountability issues as well as tackling effectively social inclusion problems.<sup>136</sup>

### **Gross Domestic Product (GDP) per capita over time – World Bank classification**

In 2010 the World Bank classified Indonesia as a low- middle-income economy.<sup>137</sup> For this same year, its GDP was estimated in US\$ 706,558,240,892 and the GDP per capita (Atlas method) in \$2,580 (current US\$).<sup>137</sup> Figures 11 and 12 show the time trends of the Indonesian GDP in recent years and during a period spanning several decades.<sup>138</sup>

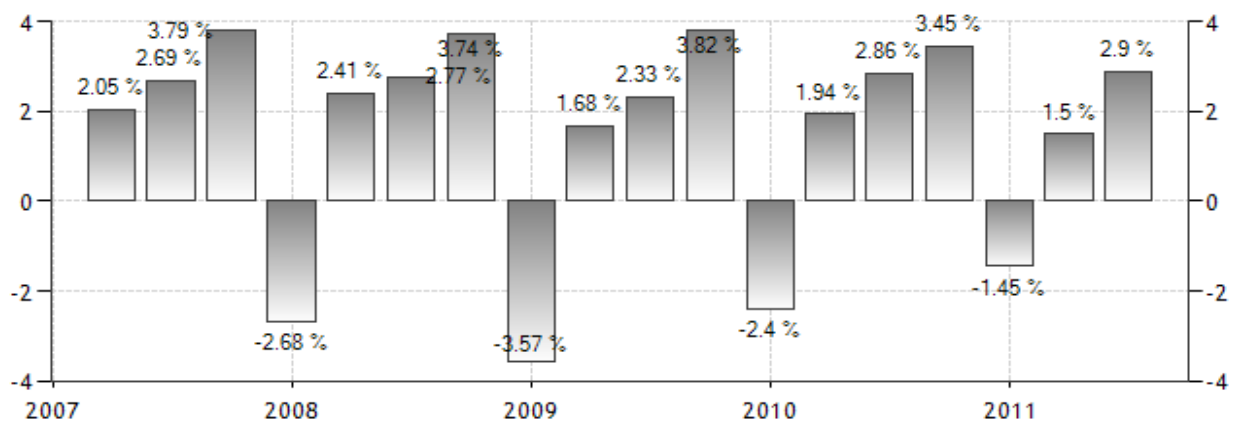
Indonesia achieved an annual average GDP growth rate of 5.2% during 2001- 2008, among the highest in Southeast Asia,<sup>138</sup> and its economy has also weathered the recent global economic crisis well. Nevertheless, the current pace of growth is much lower than what was achieved before the 1997 Asian

financial crisis.<sup>138</sup> If growth is maintained at this level, Indonesia would require about 23 years to reach the per capita income level that Thailand had achieved in 2008.<sup>138</sup>

The pace of poverty reduction has weakened in recent years and the poverty incidence, at about 14.2%, is nearly double the target of 8.2% set in the government's Medium-Term National Development Plan 2004–2009.<sup>138</sup> A further concern is that the natural resources and environment have been deteriorating rapidly.<sup>138</sup> It was estimated that over 5 million hectares of forest disappeared between 2000 and 2005 and that over two-thirds of the country's coral reefs had lost at least half of their living corals by 2005.<sup>138</sup>

The GDP in Indonesia expanded 2.90% in the second quarter of 2011 over the previous quarter.<sup>121</sup> Historically, from 2005 until 2011, Indonesia's average quarterly GDP Growth was 1.50% reaching an historical high of 3.82 % in September of 2009 and a record low of -3.57% in December of 2008.<sup>121</sup> Indonesia is the largest national economy in Southeast Asia.<sup>121</sup> It has a market-based economy in which the government plays a significant role by owning more than 164 state-owned enterprises, and the government administers prices on several basic goods, including fuel, rice, and electricity.<sup>121</sup>

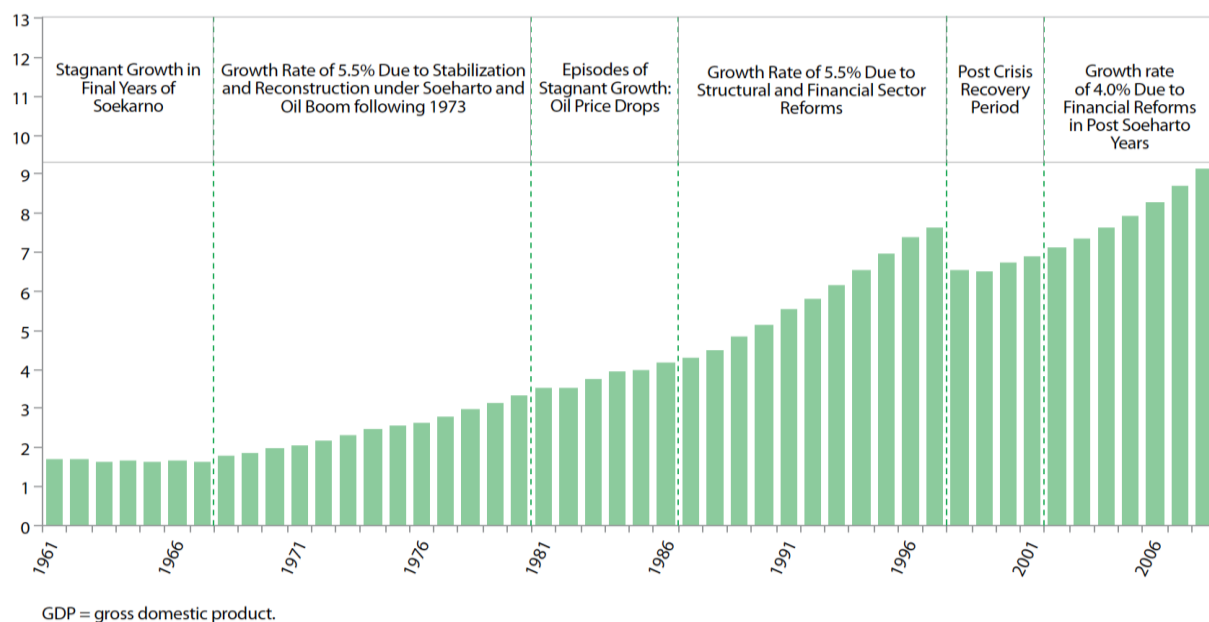
**Figure 11. Indonesia GDP growth rate from 2007 to 2011**



Source: Trading Economics.com; Badan Pusat Statistik Indonesia

**Figure 12. Indonesia's Economic History—Per Capita Real GDP (1961–2008, Rp million)**





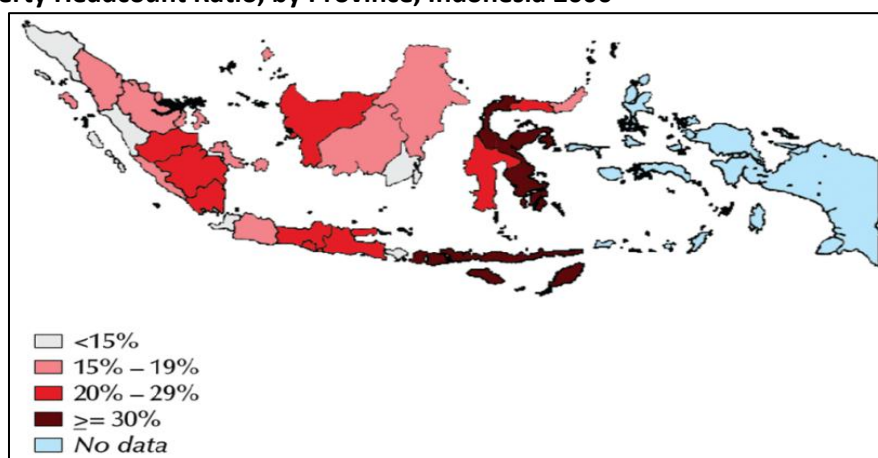
Source: World Bank, WDI

## Poverty rate

The World Bank estimated that in 2010, 13.3% of Indonesian population was poor.<sup>139</sup> National poverty rate is the percentage of the population living below the national poverty line. National estimates are based on population-weighted subgroup estimates from household surveys.

As an illustration of the heterogeneity in the distribution of poverty within Indonesia, Figure 13 shows that the percentage of the population living below the national poverty line ranges from below 15% to 30% and over in different provinces.<sup>140</sup>

Figure 13. Poverty Headcount Ratio, by Province, Indonesia 2000



Source: BPS 2004

## Health systems overview

## Morbidity and mortality burden

Indonesia's government has made important efforts for increasing the provision of health care and has paid particular attention to primary care over the past few decades. These efforts have contributed to significant improvements in some health outcomes, such as life expectancy and child mortality. According to a recent report by the World Bank, life expectancy at birth increased from 60 years in 1986 to 69 years in 2007, and the infant mortality rate (IMR) decreased from around 110 per 1,000 live births in the early 1980s to 34 per 1,000 live births in 2007,<sup>104</sup> and it is therefore on track to attain the Millennium Development Goal for child mortality. When compared with several other countries, Indonesia's IMR in 2006 was lower than the average for its income level, and its life expectancy was about average for its income.<sup>104</sup> However, the same World Bank report showed that Indonesia's performance with regard to some other key health outcomes, including maternal mortality and child malnutrition, has been poor.<sup>104</sup> Also, Indonesia's maternal mortality ratio (MMR) is among the highest in the region and is much higher than one would expect for its income level. The average prevalence of child malnutrition is still 23% over the period 2000–2006, and is high even in relation to its income level.<sup>141</sup> Despite the significant improvements in life expectancy, under-age 5 mortality, and infant mortality, rates are worse than those in peer countries in the region, including China, Malaysia, the Philippines, Thailand, and Vietnam.<sup>104</sup>

In poorer provinces, such as Gorontalo and West Nusa Tenggara, infant and child mortality rates are four to five times those in richer provinces, such as Bali and Yogyakarta.<sup>141</sup> Moreover, health indicators also reveal substantial inequities, being far worse for the poor than those for the rich. For instance, the child mortality rate among the poorest quintile in 2003 was 3.5 times the rate among the richest quintiles.<sup>142</sup> Table 54 shows the time trends for selected maternal and child health indicators from 1992 to 2007.<sup>91</sup>

**Table 54. At a Glance: Health Outcomes and Trends in Indonesia**

Indicator	1992	1997	2002	2007
Life expectancy at birth, total (years)	62	65	69	69
Fertility rate, total (births per woman)	3.0	2.8	2.6	2.6 to 2.2 <sup>a</sup>
Infant mortality rate (per 1,000 live births)	67.8	45.7	34.7	34.0
Under 5 mortality rate (per 1,000)	97.4	58.2	45.7	45.0
Maternal mortality ratio (per 100,000 live births) <sup>b</sup>	465	425	307	228 420 <sup>c</sup>
Births attended by skilled health staff (% of total)	35.1	49.1	66.2	73
Birth delivered at a health facility (% of total)	20.9	20.7	39.8	46.1
Immunization (all) (% of total)	48.3	54.8	51.4	58.6
Under 5 underweight malnutrition (% of total)	37	29	27	27

Source: DHS 2002/3–2007; Susenas 2006.

Note:

- 2.6 is the most recent estimation in DHS 2007; 2.2 with refined sampling (Hull and Mosley 2008).
- All maternal mortality ratios are subject to very high confidence intervals; often the difference between the lowest and highest point estimates is greater than the midpoint.
- Most recent estimate is from 2005 using more accurate estimation methods (WHO et al. 2008). This data point is not comparable with the earlier years because different methods are used to estimate mortality rates.

**Source: DHS 2002/3–2007; Susenas 2006**

### Communicable diseases

Although the incidence is declining, communicable diseases still remain important and make up 43% of deaths in Indonesia.<sup>91</sup> HIV/AIDS has also posed a major public health threat since the early 1990s.<sup>92</sup> In

2003 Indonesia ranked third among ASEAN nations in Southeast Asia, after Myanmar and Thailand, with a 0.1% adult prevalence rate, 130,000 HIV/AIDS cases, and 2,400 deaths.<sup>92</sup> The 2009 estimated HIV prevalence rate for adults aged 15-49 years was 0.2 per 1,000 adults and the estimated number of people (all ages) living with HIV for the same year was 310,000.<sup>143</sup>

Additional communicable diseases representing public health problems for Indonesia in 2004 included dengue fever, dengue hemorrhagic fever (DHF) and avian influenza,<sup>92</sup> with all 30 provincial-level units affected by dengue fever and DHF. The outbreak of highly pathogenic avian influenza (A/H5N1) in chickens and ducks in Indonesia may have posed a significant threat to human health.<sup>92</sup> By 2010, there are 3 reported malaria regions in Indonesia: Nusa Tenggara Barat with 20 cases per 1,000 citizens, Nusa Tenggara Timur with 20-50, and Maluku and Papua with more than 50 cases per thousand.<sup>92</sup> Sumatra, Kalimantan and Sulawesi are reported to have a medium endemicity, whereas low endemicity is in Java and Bali where almost 100% of malaria cases have been confirmed<sup>144</sup> In 1990 the malaria average incidence was 4.96 per 1,000 and declined to 1.96 per 1000 in 2010. The government is targeting to rid the country of malaria by 2030. Elimination means to achieve less than 1 incident per 1,000 people.<sup>145</sup>

Tuberculosis (TB) is still another communicable disease that poses a great burden on Indonesia. It ranks third on the list of 22 high-burden TB countries in the world.<sup>146</sup> According to WHO's *Global Tuberculosis Control Report 2009*, there were an estimated 528,063 new TB cases and an estimated incidence rate of 102 new sputum smear-positive cases per 100,000 population in 2007.<sup>146</sup> Based on WHO disability-adjusted life-year calculations, TB is responsible for 6.3% of the total disease burden in Indonesia, compared with 3.2% in the Southeast Asian region.<sup>146</sup> Multidrug-resistant TB, although still at a relatively low rate, is a major challenge for TB control in Indonesia, as the total number of multi-drug TB cases is considerable due to the large numbers of TB patients.<sup>146</sup>

## Non-communicable diseases

The most recent reports of the World Health Organization (WHO) on mortality and morbidity burden attributable to non-communicable diseases (NCDs) in Indonesia are summarized below:<sup>93, 94</sup>

- Proportional mortality (% of total deaths, all ages): NCDs are estimated to account for 64% of all deaths.
- Total NCD deaths ('000s): Males: 582.3; Females: 481.7
- NCD deaths under age 70 (% of all NCD deaths): Males: 57.6; Females: 47.0
- NCD deaths under age 60 (% of all NCD deaths): Males: 33.9; Females: 26.3
- Age-standardized death rate per 100 000, for males: All NCDs: 757.0; Cancer: 135.9; respiratory diseases: 102.3; cardiovascular diseases and diabetes: 400.2
- Age-standardized death rate per 100 000, for females: All NCDs: 537.9; Cancer: 108.9; respiratory diseases: 52.4; cardiovascular diseases and diabetes: 300.3

In addition, the WHO reports include information on behavioral and metabolic risk factors for males and females.<sup>93, 94</sup> Behavioral factors include current daily tobacco smoking and physical inactivity (behavioral) that are in general higher for males. Metabolic risk factors include raised blood pressure and raised blood glucose (somewhat higher for males), overweight, obesity and raised cholesterol (higher for females).

## Maternal and child health

Summary maternal and health indicators for Indonesia provided by UNICEF are described below.<sup>143, 147</sup>

- Maternal mortality ratio per 100,000 live births (year 2005), adjusted: 420 (uncertainty bounds: 240-600).<sup>147</sup>
- Current ratio reported in 228<sup>109</sup>
- Under-5 mortality rate per 1,000 live births (year 2009): 39
- Infant mortality rate per 1,000 live births (under 1) (year 2009): 30
- Neonatal mortality rate per 1,000 live births (year 2009): 19

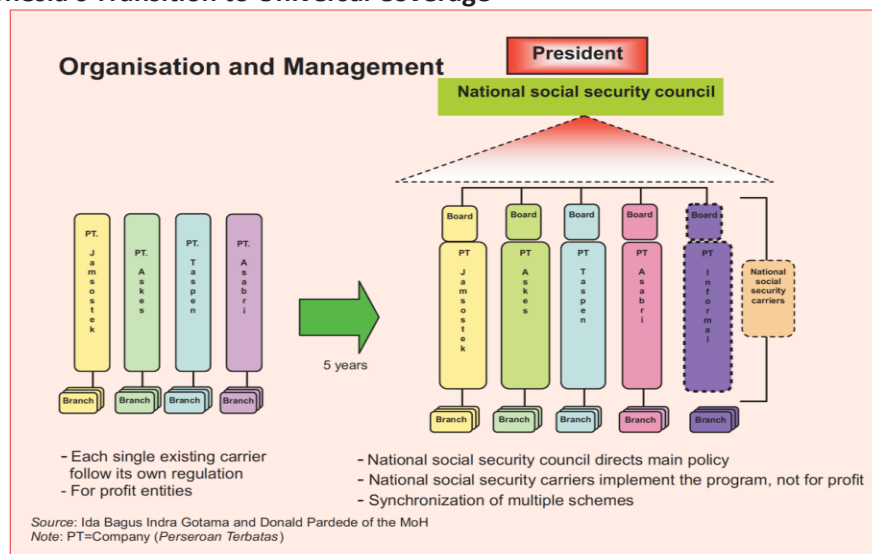
## Magnitude of health workforce crisis and mix of health workers cadres

A description of the health workforce with focus on mid-level health workers is provided in detail in Sections 2 and 3 of this report.

## Major drivers of the national health policy

Indonesia is committed to providing universal health insurance coverage to its population through a mandatory public health insurance scheme.<sup>91</sup> Law No. 40/2004 passed by the legislative established the National Social Security System. Under this system, coverage for the poor will be financed by the government and financing for the remainder of the population will be through a contributory scheme.<sup>91</sup> The legislation envisages the involvement of the existing health insurance carriers (including *P.T. Askes* and *P.T. Jamsostek*), provided they convert to nonprofit status by October 2009.<sup>91</sup> This new public health policy also includes provision for local governments to opt out and establish their own “comparable” systems. Figure 14 provides a graphic depiction of the planned transition from existing health programs to the mandatory universal health system.<sup>91</sup>

**Figure 14. Indonesia’s Transition to Universal Coverage**



**Source: Ida Bagus Indra Gotama and Donald Pardede of the MoH**

This new legislation, like most similar framework laws, contains few specifics with regard to critical aspects of the new system, including timing; transitional arrangements; exact roles of existing insurance entities; the exact form and governance structure of the ultimately unified national health insurer; breadth and depth of benefits covered (and their inherent affordability and trade-offs between health outcome and financial protection), including co-payments and residual public health functions of the Ministry of Health; contracting arrangements, provider payment mechanisms, and whether global expenditure caps will be employed and whether extra billing of patients by medical care providers will

be allowed; contribution levels; enrollment, premium levels, and methods for collecting premiums from difficult-to-reach groups such as informal sector workers; and the role of private voluntary health insurance.<sup>91</sup> Moreover, although a provision allowing local governments to opt out and establish their own comparable systems has been considered, the opt out criteria are not specified.<sup>91</sup>

In 1999, the Ministry of Health released the document *Health Development Plan Towards Healthy Indonesia 2010*.<sup>95</sup> The creation of “Healthy Indonesia 2010” forces the Ministry of Health and Social Welfare to forge collaborative relationships with others.<sup>88</sup> As health is a shared responsibility, the Ministry of Health and Social Welfare must involve all strata of the community, all related government departments and agencies, and the private sector.<sup>88</sup> In the effort to achieve “Healthy Indonesia 2010”, the Ministry of Health and Social Welfare must also be proactive and forward-thinking.<sup>88</sup>

The ‘Healthy Indonesia 2010’ goals are:

- To initiate and lead a health orientation of the national development
- To maintain and enhance individual, family, and public health along with improving the environment
- To maintain and enhance quality, accessible, and affordable health services
- To promote public self-reliance in achieving government health

While the Ministry of Health and Social Welfare was re-defining the new Vision and Mission, two new fundamental Acts were enacted, namely Act No. 22/1999 on Local Governance and Act No. 25/1999 on Financial Balance Between Central Government and Local Governments. The two Acts are a reference for the implementation of decentralization policy in Indonesia, which give provinces and districts a large autonomy to manage their own home affairs except defense, monetary and fiscal, foreign affairs, justice, and religion.

Based on the new Vision and Mission of National Health Development and in line with the decentralization policy, it is agreed that there are four paramount issues to serve as the pillars in formulating a Strategy for National Health Development. These are:

- Initiating health-oriented national development
- Professionalism
- Community Managed Healthcare Program (JPKM)
- Decentralization

The identification of these four elements as pillars of the Strategy for National Health Development does not mean that other programs should not be supported.<sup>88</sup> All programs and plans of potential assistance to the Ministry of Health and Social Welfare in achieving the new Vision and Mission should be continued, even though these four pillars have the highest priority.<sup>88</sup>

The government’s Ministry of Health strategy is built on four pillars: community empowerment; health financing; access to health services; and, surveillance. These pillars are translated into programs to achieve the goals as follows: community empowerment would be achieved through the *Desa Siaga* program, which foresees a health worker (midwife and/or nurse) in every village by 2009.<sup>100</sup>

Regarding the structure of the health system,<sup>88</sup> in Indonesia there are 33 provinces and each province is sub-divided into districts and each district into sub-districts. As decentralization had been already implemented, the 349 regencies and 91 municipalities are now the key administrative units.<sup>88</sup> Each sub-district in Indonesia has at least one health center headed by a doctor, usually supported by two or three sub-centers, the majority of which are headed by nurses. Health centers mainly provide eight

programs.<sup>88</sup> Most of the health centers are equipped with four-wheel drive vehicles or motorboats to serve as mobile health centers and provide services to underserved populations in urban and remote rural areas.<sup>88</sup>

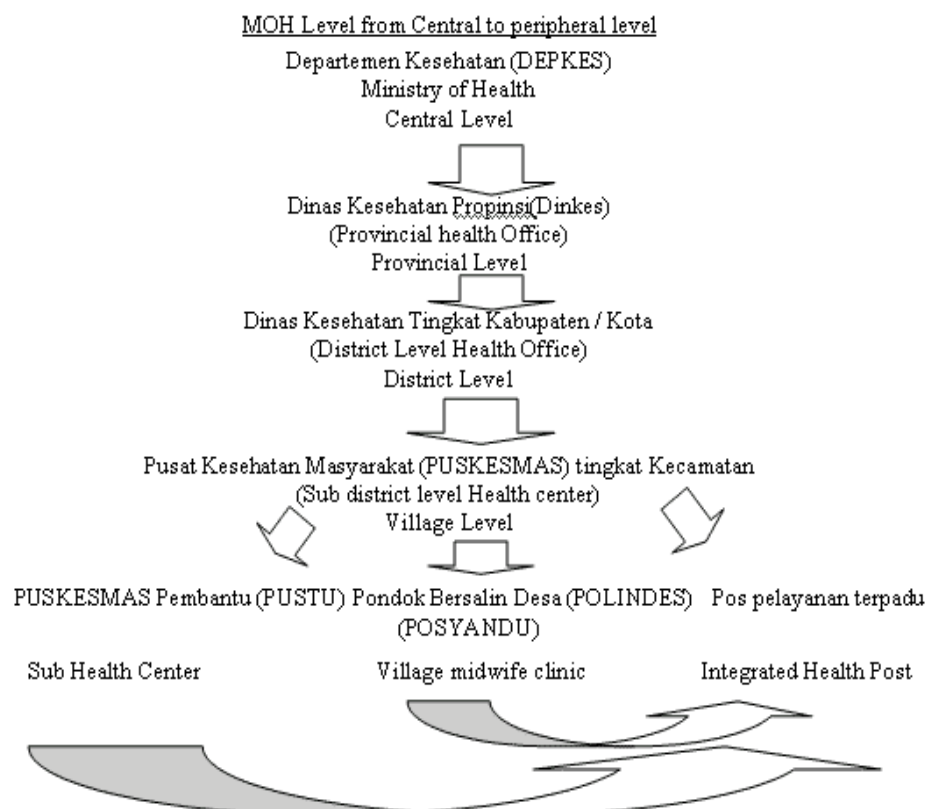
At the village level, the integrated Family Health Post provides preventive and promotive services.<sup>88</sup> These health posts are established and managed by the community with the assistance of health center staff.<sup>88</sup> To improve maternal and child health, midwives are being deployed to the villages.<sup>88</sup>

The Decentralization Policy has been implemented in Indonesia, with the implementation of Act No. 22/1999 regarding Regional Governance and Act No. 25/1999 regarding the financial equality between Central and Regional government. With the implementation of the aforementioned Acts, the government system in Indonesia has been changed from Centralized to Decentralized type of government, which provide regional autonomy.<sup>88</sup> In the Act No. 22/1999, there have been three levels of regional autonomy, i.e., Province, District, and City regional autonomy.<sup>88</sup>

Paragraph 4, sub-paragraph 2 states that there are no hierarchical links between these three regional autonomy regimes. However, in the explanation of paragraph 4, it is stated that Governor (as Head of Province Regional Autonomy and Head of Administrative area) will have to perform links in guidance, monitoring and supervision to the District and City areas.<sup>88</sup> This is in relation to the delegation of responsibility to Province which has been stated as having limited autonomy; but it has been also given broader de-concentration as representative of Central government. The rule of Guidance and Supervision has been clearly stated in the Government Act No. 20/2001 regarding Guidance and Supervision of Governance implementation applied to local government.<sup>88</sup>

**Figure 15. Organizational Structure of Health System**





Source: Indonet. Living in Indonesia, A Site for Expatriates.

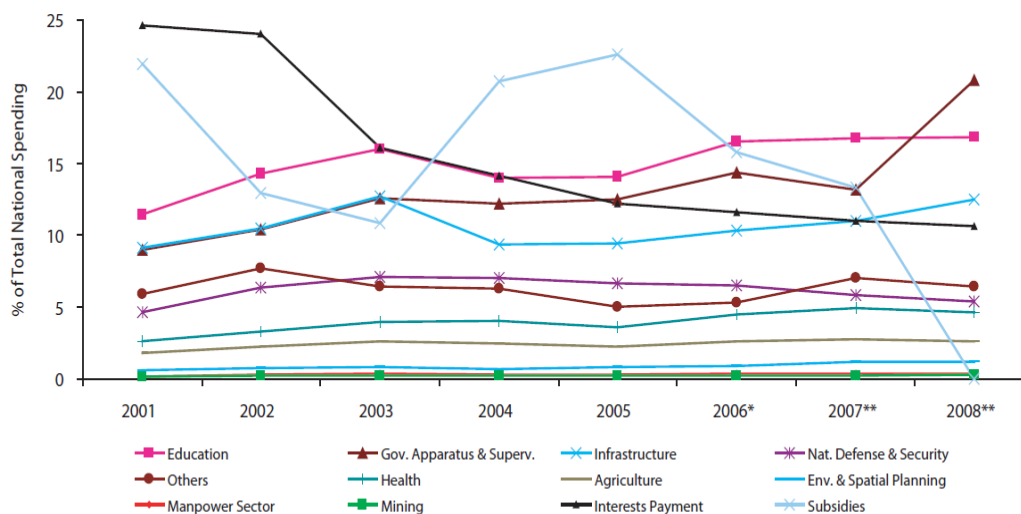
In accordance with the principle of delegation of Province government responsibility, broader decentralization has been given to District and City levels. Regional government has also been given the authority of “support = perbantuan” or “medebewind”, meaning that regional development has to be performed by District/City, while the development at Province level is limited only to those that have not been covered by District/City, and Inter-district/Inter-city. Meanwhile, the Central government has to perform the role of policy formulation, to set up standards, and to provide guidance to Province and District/City government levels.<sup>88</sup>

Additionally, Government Act on Health No. 23/1992 states that Health Systems should be implemented by the community having government as a facilitator, and private sectors should perform an active role, so that government will act in the provision of guidance and supervision.<sup>88</sup>

### Financing model for the health system and policy on public/private health care

At the macroeconomic level, Indonesia’s spending shares have changed dramatically since 2001, and with declining debt repayments and recently reduced subsidies, sectoral spending has been increasing.<sup>98</sup> However, sectoral spending could have been increased far more had subsidy payments not surged sharply in 2004 and 2005 due to increasing oil prices, crowding out additional (development) spending in key sectors.<sup>98</sup> At present, the education sector is the number-one spending sector in Indonesia. On the other hand, although expenditures for the health sector have been rising gradually over the past few years, levels are still below 5% of total government spending and below 1% of GDP (Figure 16).<sup>98</sup>

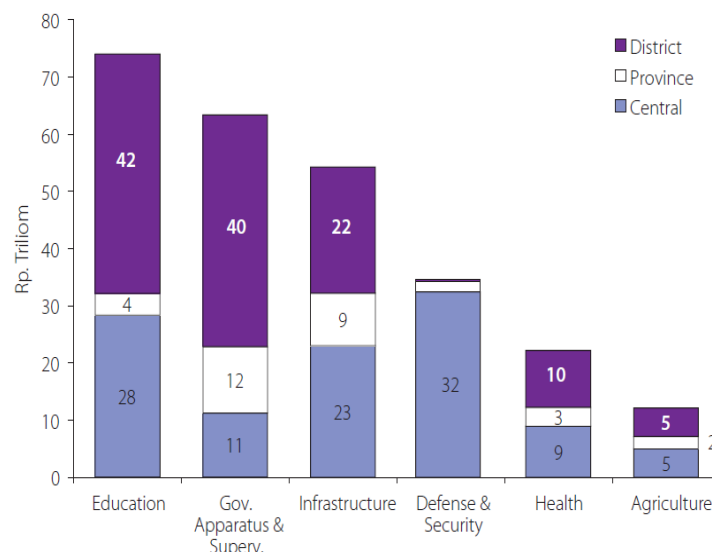
**Figure 16. Distribution of national public expenditures in key sectors, 2001-07 (Taken from reference 35).**



Source: World Bank staff calculations based on MoF and SIKD data.

Clearly, the current spending mix is less than optimal in addressing Indonesia's development challenges,<sup>99</sup> particularly those aspects related to fighting poverty, and the improvement of health services. While remarkable progress has been made over the past two years in reallocating spending (from inefficient subsidies) towards pro-poor programs, Indonesia is still under-spending in key sectors, such as infrastructure and health.<sup>99</sup> Impressive gains have been made in allocating additional funds to education, which is now the sector with the largest public spending (in 2005, education spending accounted for 13.9% of total national expenditures),<sup>99</sup> albeit education quality is still a problem that needs further attention. Then spending on core government administration (excluding salaries for teachers, doctors and nurses) constitutes the second largest sectoral spending item representing as much as 11.9% of the total (Figure 13).<sup>99</sup> This is high compared with the level of spending on government administration observed in other similar countries, which range from 5 to 10%. By contrast, the level of spending on the infrastructure and health sectors (10.2% and 4.2% of total expenditures, respectively) is rather low by most international standards. In 2005, the government also spent 22.6% of its budget on mainly pro-rich subsidies (reported under the Trade, National Business Development, Finance and Cooperative Sector).<sup>99</sup> This means that taken together, spending on core government administration and subsidies accounts for as much as 35% of total government spending.

Figure 17. Sectoral spending in Indonesia: education and government apparatus dominate.



**Source: World Bank staff estimates, 2005.**

Health expenditure at the sub-national level compared with total public expenditures is therefore only a small share of the budget.<sup>98</sup> Although the provision of healthcare, including hospitals as well as primary care, has been the full responsibility of district governments since decentralization, the sector only receives 7% of the total sub-national funds (7 and 9% at the district and province levels, respectively).<sup>98</sup>

Thus despite the government's recent increases in health spending, public health expenditure remain clearly low. Indonesia spends less than 3% of GDP on health (of which less than 1% is public spending), which is less than the average for countries in the East Asia and Pacific region (6.1%) and the lower-middle- income group of countries (5.9%) (Table 55).<sup>102</sup> Indonesia's health infrastructure is relatively less developed, with fewer hospital beds per 10,000 population than its neighbors in the region. Many public health facilities reportedly suffer from weak infrastructure and a lack of equipment.<sup>102</sup> The country as a whole suffers from a lack of doctors, nurses, and to some extent midwives, particularly in rural and remote areas.<sup>102</sup> Neighboring countries such as Vietnam, Philippines, and Malaysia spend more and have better health outcomes, including child and maternal mortality rates.<sup>102</sup>

Figure 18 shows that Indonesia spends less on health than its neighbors and has a lower life expectancy at birth.<sup>102</sup> Of note, Philippines and Thailand spend only slightly more on health as a percentage of GDP than Indonesia but perform better on this outcome measure.<sup>102</sup>

**Table 55. Regional comparison of health performance indicators, 2006 (unless noted).**

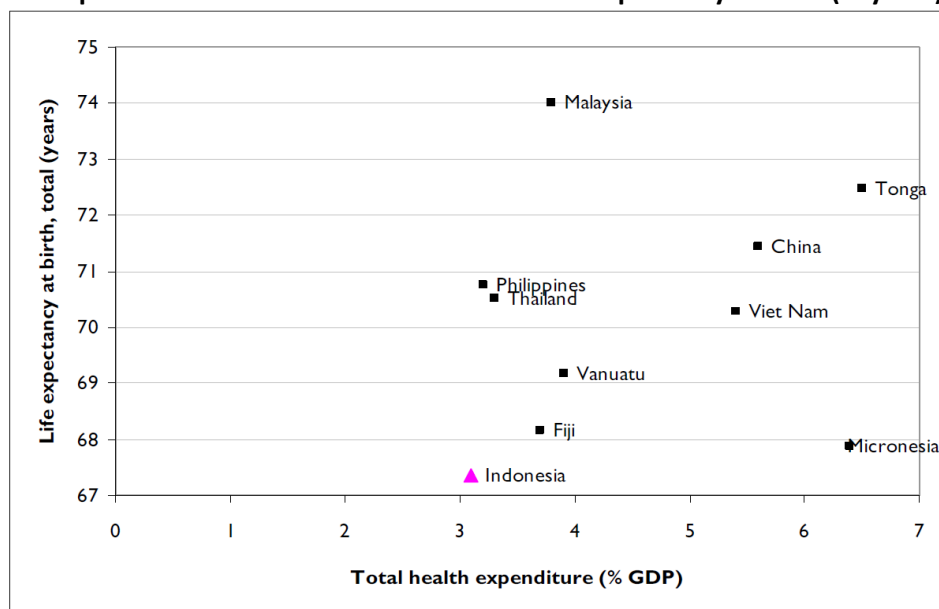
Indicator	Indonesia	Philippines	Thailand	Malaysia	China	Cambodia	Viet Nam
<b>Health Financing</b>							
Total health expenditure (THE) as % of GDP	2.2	3.3	3.5	4.3	4.5	6	6.6
General government expenditure on health as % of THE	50	40	64	45	42	26	32
<b>Health Status</b>							
Life expectancy at birth (years)	68	68	72	72	73	62	72
Infant mortality rate (per 1,000 live births)	26	24	7	10	20	65	15
Under-5 mortality rate (per 1,000 live births)	34	32	8	12	24	82	17
Maternal mortality ratio (per 100,000 live births)	420 <sup>f</sup>	230 <sup>f</sup>	110 <sup>f</sup>	62 <sup>f</sup>	45 <sup>f</sup>	540 <sup>f</sup>	150 <sup>f</sup>
Births attended by skilled personnel (%)	66 <sup>d</sup>	60 <sup>d</sup>	97	100 <sup>f</sup>	98	44 <sup>f</sup>	88
Contraceptive prevalence (%)	61	49 <sup>d</sup>	72	--	90 <sup>e</sup>	40 <sup>f</sup>	79 <sup>e</sup>
<b>Health Systems</b>							
Hospital beds (per 10,000 population)	2.5 <sup>f</sup>	13	22 <sup>a</sup>	19	22	6 <sup>b</sup>	26 <sup>f</sup>
Physician density (per 100,000 population)	13 <sup>d</sup>	58 <sup>a</sup>	37 <sup>a</sup>	70 <sup>a</sup>	106 <sup>b</sup>	16 <sup>a</sup>	53 <sup>b</sup>
Nursing density (per 100,000 population)	62 <sup>d</sup>	169 <sup>a</sup>	28 <sup>a</sup>	135 <sup>a</sup>	105 <sup>b</sup>	61 <sup>a</sup>	56 <sup>b</sup>
Midwife density (per 100,000)	20 <sup>d</sup>	45 <sup>a</sup>	1 <sup>a</sup>	34 <sup>a</sup>	3 <sup>b</sup>	23 <sup>a</sup>	19 <sup>b</sup>

Key: a) 2000; b) 2001; c) 2002; d) 2003; e) 2004; f) 2005.

Sources: WHO (2006c) and WHOSIS accessed at <http://www.who.int/whosis/en/index.html>.

Source: WHO, 2006

Figure 18. Total expenditures on health as % of GDP and life expectancy at birth (in years), 2006.



Source: The World Bank, 2006

The health system in Indonesia remains mostly publicly focused and reportedly, it continues to be based on the principles and features of Alma Ata (universal access to public primary care), although half of all

health spending is private, largely out-of-pocket, and almost half of all those who are ill actually seek health services from private providers.<sup>91</sup> Therefore out-of-pocket payments still constitute a sizeable share of health spending, and the challenge for the government is to channel these expenditures into risk-pooling mechanisms to effectively provide protection against catastrophic health spending,<sup>91</sup> particularly to the poorest segments of the population. Government health expenditures as a share of the budget increased from 4.3% to 5.3%, while household out-of-pocket spending decreased only slightly from 36% of all spending (62% of 58% of overall private spending) in 1996 to 33% (66% of 50%) in 2006.<sup>91</sup>

Total, public, total private, and out-of-pocket private health spending all increased during the 11-year period 1996–2006. Total health expenditure increased almost sevenfold, from under Rp 10 trillion in 1996 to just over Rp 70 trillion in 2006.<sup>91</sup> Private health expenditure remained greater than public health expenditure during the period, until 2006 when public health spending marginally surpassed private health expenditure. Out-of-pocket payments remained on a par with public health expenditure up to 2004.<sup>91</sup> In the subsequent two years, however, public health expenditure increased by 85%, far higher than the increase in out-of-pocket spending.<sup>91</sup>

### Decentralization policy

Hastily prepared amidst the painful political turmoil in the aftermath of the New Order government, Indonesia started in 2001 an unprecedented decentralization process (The “Big Bang” decentralization). According to an enthusiastic report of the World Bank in 2003, “it was a “Big Bang” indeed”, as much of the governmental apparatus was transferred to the regions in the course of that same year, regions received substantial financial transfers, the regional share in government spending jumped sharply, and a completely new intergovernmental fiscal system was put in place.<sup>96</sup> This same report exposed key pending issues to be addressed in the decentralization process. First, it underlined that the basic law on regional autonomy showed signs of the haste with which it was put together, and the implementing regulations are neither complete, nor always clear.<sup>96</sup> Second, it emphasized that expenditure assignments were therefore hard to gauge, that they were not always appropriate, and functioned with large externalities among local governments’ risk underprovision.<sup>96</sup> Third, it expressed concern on the transfer of millions of civil servants that went by without a glitch, but with civil service reform emerging as one of the key challenges for local government.<sup>96</sup> It also stressed that the business climate had suffered in the transition, be it from confusion over authority, local taxes, or ambitious local governments that wanted to go into business.<sup>96</sup> Finally, it warned that over time, the legal and regulatory framework would need revision, which would create more clarity and a stronger basis for decentralization depending on the process by which these revisions would come about.<sup>96</sup>

A more recent analysis of the decentralization process is more critical and identifies several unintended consequences, not always positive.<sup>138</sup> Expectations about improvements in governance and service delivery proved to be elusive.<sup>138</sup> The Indonesian experience suggests that decentralization resulted actually in major dents in the quality of governance in the country. In particular, quality of government effectiveness and control of corruption plummeted in the early years of decentralization.<sup>138</sup> One major change brought about by decentralization was the way that the national and regional governments planned and interacted. Not only did the local governments have full autonomy to plan but they were also not required to report to the national government on their yearly achievements and performance.<sup>138</sup> Venues and forums for coordination became weak and led to situations where the national and local level initiatives overlapped. In some cases, the full benefits of investments could not be achieved due to lack of complementary investments from the national or local governments.<sup>138</sup>

What did this decentralization process mean for health care provision to Indonesians? It provided the local governments the responsibility to perform all functions except those assigned to the center and the province.<sup>96</sup> The local governments had obligatory “sectors” (*bidang pemerintahan wajib*), including health, education, public works, environment, communications, agriculture, industry and trade, capita investment, land, cooperatives, and manpower and infrastructure services.<sup>96</sup>

Besides increasing the allocation for development spending, the regions have significantly shifted its composition as well. At least initially, this seemed to be benefiting social spending such as health and education in particular.<sup>96</sup> Local governments overall increased the share of the development budget allocated to these sectors from 12 to 17% of total spending.<sup>96</sup>

A recent analysis of performance of the health system after the “Big Bang” decentralization shows rather disappointing results.<sup>148</sup> In spite of significant increases in public funding for health, there has been little improvement in the performance of the health system since decentralization occurred in 2001. In fact, the authors state, decentralization has been limited in extent and structural problems make management of the system as a whole difficult.<sup>148</sup> Moreover, at the national level there has been no real attempt to envision the health system that Indonesia will need for the next 20 to 30 years or how the substantial public subsidy to this lightly regulated private system could be used in creative ways to stimulate innovation, mitigate market failures, improve equity and quality, and to enhance the performance of the system as a whole. The authors acknowledge that an experimental design was not given the way in which decentralization occurred, and thus clear attribution of any changes that may have occurred to decentralization is not possible. They additionally state that the districts were not randomly chosen. Even so, they conclude that the consistency of the results in the explored areas (antenatal and delivery care, child immunization coverage, and contraceptive method use) give a strong indication that the effects as a whole are coherent.<sup>148</sup>

Another study focusing on the effects of decentralization on human resources for health in 15 districts of Java, found that the private sector has undergone a continued expansion as a significant health provider, and that in spite of this, government information on providers in private practice is actually decreasing.<sup>90</sup> The study also found that the distribution of health providers was not equitable at all.<sup>90</sup> The number of doctors, nurses and midwives/1000 population was low by international standards – 11 out of 15 districts had provider densities less than 1.0. Moreover, about half of all three professional groups were permanent public servants. Contractual employment was also important for both nurses and midwives. The private sector as the primary source of employment is most important for doctors (37% overall) and increasingly so for midwives (10%). For those employed in the public sector, two-thirds of doctors and nurses work in health centers, while most midwives are located at village-level health facilities. The authors conclude that “despite the promise of decentralization to increase sectoral “decision space” at the district level, the central government now has control over essentially all public sector health staff at the district level, marking a return to the situation of 20 years ago”. At the same time, they call for envisioning a new health system that takes into account the dramatic changes that Indonesia has undergone, as a crucial first step for development of a human resources policy which, in turn, will require more information about health care providers, public and private, and increased capacity for human resource planning.<sup>90</sup>