Human Resources in Decentralized Health Systems in Indonesia: Challenges for Equity

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Introduction

The beginning of the New Millennium has been marked by massive plans, discussions, and reforms of many aspects of human life. Undoubtedly, the New Millennium will pave the way for a globalized world, with virtually no borders across countries. Governments, politicians, businessmen, and health policy makers alike, are looking for the consequences of the new paradigm of the global world. Commercial activities across countries are being rapidly liberalized. The democratization process has penetrated countries that were previously under authoritarian regimes. Privatization of public services by reducing the government role in trade and services is being widely and rapidly implemented. While some are concerned at fairness in trade and services, others are concerned at equity and impoverishment of people, especially in the least developed, poor and less competitive countries. There is a notion that centralized governments tend not to address people's needs, and decentralization, which would result in smaller government units is seen as a better solution for the welfare and prosperity of the people.

The Asian economic crisis in the late 1990s that hit Indonesia hard forced the country to undertake many radical reforms in almost all aspects of governance. The demand for decentralized government was inevitable. In 2001, despite recommendations being made to devolve the governance gradually, the decentralization of government functions, from central to local government was started. The health sector is one of the service sectors, that has devolved its functions to the city, municipalities and district governments. Bossert et al. (2003)[1] reported that decentralization in Colombia and Chile improved equity and utilization of health services through better and more equitable resource allocation to local governments. The decentralization effort in Indonesia was aimed at improving the decision-making process to ensure more appropriate decisions and better policies to tackle local health problems. Many policy-makers in Indonesia had expressed concern over the worsening of the health situation under the centralized health sector due to high discrepancies of financial and human resources for health (HRH) across cities or districts. Whether this expectation is supported by evidence will need to be proved in the coming years. This paper addresses some concerns and provides policy options in an attempt to address problems arising from inexorable decentralized health services in Indonesia.

Essential Public Health Services

The commitment to decentralization of health systems in Indonesia had started long before the economic crisis in 1997. The Ministry of Health (MoH) in its national policy on "Healthy Indonesia 2010" developed in the mid-1990s had already envisaged decentralization as a way for better management of the paradigm shift for health development.[2] When the Indonesian Government enacted a legislation on

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regional autonomy in 2002 (Act no 22/2002), many policy makers were concerned with inequity in access to essential public health services, such as maternal and child health, immunization, health promotion, disease surveillance, disease prevention and control including response to epidemics. In addition, there were concerns that the existing huge gaps in the distribution of human and financial resources could widen further across provinces and across cities and districts within a province.

While the decentralized health sector in many developed countries shows relatively small disparities across regions, the prevalence of disparities in Indonesia before and at the beginning of the decentralization process was very extensive. In Ende, a small district in East Nusa Tenggara, the *bupati* (chief of district administration) reported that only six out of 28 health centres in the district had a doctor each.

Till the late 1990s, the Ministry of Health, as part of its central responsibility, used to deploy newly appointed doctors under contract to remote districts as a mandatory service. Under the new decentralized arrangement, it is the policy and authority of local governments to employ a medical officer. The differences in fiscal capacity of local governments to finance public health services and to hire public health professionals had resulted in an unbalanced distribution of human resources.

A study by Ascobat Gani (2005)[3] indicated that in selected underdeveloped cities/districts, the distribution of human resources varied with the differences among them from one- to five-fold as shown in Table 1. The ratio of nurses and midwives, who are essential to ensure personal health care for reduction of maternal and child morbidity and mortality, also differed by one- to four-folds. Accordingly, the ratio of public health professionals such as health analysts and sanitarians differed significantly.

Table 1. *Ratios of human resources for health in selected cities/districts in Indonesia (per 100 000 people)*[3]

Category of human resources	City/Districts							
	Kotacane	Bengkulu Utara	Indragiri Hulu	Klung-kung	Kendari	Palu	Gorontalo	Bolaan Mongondow
MD, General practitioners	7.2	12.9	10.1	7.9	9.7	10.4	5.8	4.8
Dentists	1.2	4.8	3.5	2.4	2.9	6.6	0.7	0.9
Midwives	112.7	96.6	35.6	29.8	69.9	47.1	30.8	46.9
Nurses	54.3	57.1	46.8	41.9	56.2	46.0	44.3	53.2
Assistant pharmacists	4.2	2.7	–	3.0	0.9	5.2	0.7	1.3
Nutritionists	4.2	5.7	3.1	4.3	11.7	6.2	2.2	8.1
Health analysts	–	0.3	1.0	1.2	–	2.4	–	0.7
Sanitarians	6.6	6.9	5.9	10.9	7.6	14.5	7.7	7.7

Data from the Ministry of Health confirm that the number and distribution of public health professionals (MoH, 2006)[4] remains much below what is needed for 220 million people. Overall, for about 220 million people there are only 13 583 health

promoters and sanitarians and there are only 7 059 public health administrators. It was estimated that one health promoter must work for more than 16 000 people and one public health worker must handle 28 000 people. Maldistribution of specialists was even worse compared across regions.[5]

The threats to health especially in poor cities or districts are even higher due to the lack of understanding and awareness of new leadership of local governments, on the benefits of and funding for public health services. To ensure that local governments undertake certain public health measures, the Ministry of Health issued a decree pertaining to 26 types of minimum/essential public health services that the local governments must perform, including 54 indicators to be achieved.[6] The complete list and indicators of the minimum services is given in Annex 2. Of the 26 services, 18 are related to public health such as maternal and child health, promotion and prevention of prevalent diseases, school health and disease surveillance.

Devolving authority and obligation of health functions to the local governments poses threats to public health. Since the local government, including the local parliament, is an elected body, the chances of elected officials not having an understanding nor commitment to public health are greater than in the previous 'less democratic' government. Not only the health sector, but also other sectors responsible for basic services such as education may also be at risk of lack of local government funding, jeopardizing the future development of the local areas. In order to ensure that public programmes implemented under decentralized governments are equitable, accessible and affordable, the central (federal) government has set standards for guiding the local administration with minimum obligatory functions. There was no guarantee that local governments would meet them. The new law on regional autonomy (the Act 32/2004) has rectified some problems which existed under the previous law.

In principle, the Decree of MoH will ensure that the future generations will face fewer health hazards. Many experts, however, felt that the number and types of minimum services were too large and unclear which could lead to different sets of interpretation and thus, local governments may implement them differently. Some local governments may have difficulties in focusing certain essential functions with limited resources (more in financial than human resources).

Challenges for Decentralization

While the Ministry of Health has provided guidelines to local administrations to meet the 26 minimum obligatory services, which are more of public health services in nature, many local governments in reality are more interested in curative health care, such as constructing new or refurbishing existing hospitals, rather than strengthening the public health infrastructure. In addition, local governments are concerned over the shortage of medical officers (general practitioners and specialists) instead of closing the gaps for deployment of public health professionals. Many local governments are willing to pay a contracted amount for medical education at the University of Indonesia or even with private medical faculties, by paying large sums, in order to ensure that the respective local areas will have a medical doctor in the future.

Many policy-makers believe that the preference to medical rather than public health is temporary in nature. A strong commitment at the level of the Minister of Health and above is needed to ensure the availability and accessibility to at least 26 minimum public health services. Without such strong leadership, the renewed vision of "Healthy Indonesia by 2025", recently set as a long-term vision of public health by the Ministry of Health, would only be on paper. The policy-makers and decision-makers from the Ministry of Health have to be aware of the risks of skewing health development to more

personal health care rather than public health services.

Public health professionals from within and outside the Ministry of Health must also be aware that, in general, people (including elected officials) at all levels in Indonesia have a somewhat fixed perception that health is a medical matter. It is plausible that other professionals often complain on the appointment of medical doctors, more often specialists, as ministers of health. It is simply a common image embedded among politicians that health is analogous to medical discipline. Changing this perception would require massive efforts, funds and energy. It is the duty of public health advocates to convince politicians, and the public at large, that essential public health services as promotive and preventive measures are more beneficial, or at least have equivalent importance, to medical services.

If the minimum essential health services are provided to all 220 million citizens of Indonesia, one big question is how to mobilize the resources required for such enormous tasks. The Ministry of Health, while adopting the minimum mandatory service policy, also developed a human resources plan as listed in Annex 1. There seem to be many gaps in fulfilling the production and deployment of relevant human resources. It would take decades to fill in the gaps for public health professionals. It is no wonder then, how institutions of Public Health Education (PHE) have mushroomed: more than 45 PHE institutions across Indonesia have been established within the last five years. Similarly, establishment of new medical and nursing schools is accelerating at the same pace. It is very likely that some institution planners simply looked at the MOH prediction on the needs for human resources for health (HRH). The prediction seemed to be simplified by setting a goal of ratio of one HRH for 100 000 population without considering other aspects such as overall resource requirement, local government fiscal capacity and the need/demand for services. Taking a so-called standard ratio from other developed countries or an average of ratios in the Region may be not appropriate for Indonesia due to incomparability of resources and service demand. For example, a ratio of one family physician for 2500 people or 40 family physicians for 100 000 people in countries like UK and the Netherlands will not be applicable to Indonesia. The demand for family physician services in those countries is high due to the availability of health insurance through a formal health insurance mechanism in the Netherlands or the state's role as an insurer under the National Health Service system in UK.

The risk of inappropriate prediction could lead to the over-production of human resources and limited absorption or limited demand due to low economic status or lack of insurance. Although, under present conditions, the shortage is very obvious, any prediction of the needs for human resources for the coming years should take into account the absorption capacity of the central and local governments, the economic growth, the private sector demand for such human resources, and the employment opportunities in general. Over-production of human resources may result in a high unemployment rate. In the medical field, over-supply of physicians could increase the risk of unnecessary medical costs due to supplier-induced demand or the demand-creation phenomena. The risk of an increased moral hazard in terms of over-utilization due to over-supply of medical, nurse personnel, and health facilities will mean a heavy economic burden. Experience from the developed countries, such as the United States and Germany, where there is an over-supply of medical and health facilities and professionals, besides other factors such as ageing, medical technology, and inefficient health systems, shows that this clearly increases health care costs.

Capacity of Local Governments

Decentralized health services in Indonesia seem to have reached a point of no return. In line with the global trend of democratization and privatization, the role of the central government could be limited to regulatory, supervisory, and partial financing. The capacity of local governments to ensure absorption and creation of private sector environments to cater to appropriate human resources should be thoroughly examined. Creating a market for medical and nursing professionals is far easier than creating a market for public health professionals. The collective nature of public health services and the externality of public health services will not attract the private sector to step in for investment. No direct and immediate financial benefits will be produced for them by the work of public health workforce. Therefore, at least for a few decades, the market for public health workforce will be dependent heavily on the public sector. The public sector in Indonesia will be dominated by more than 450 cities and municipalities.

To date, it is very difficult to draw a map of the capacity of local governments. One general observation is the lack of fiscal capacity generated by the regions and the low priority given to public health. More than three quarters of local governments in Indonesia are fiscally dependent on the general allocation budget (*Dana Alokasi Umum*), allocated by the central government. As a residual effect of centralized government of the past, when good people in the municipalities and provinces were shifted to serve in the central offices, the capacity of human resources at the local governments is very limited. In such a situation, even if the central government might channel quite a large sum of funds, there is little chance that these funds will be given to the health sector. Even if the health sector receives an adequate budget, it is very likely that the funds will be used for capital items such as purchasing fancy medical equipment, constructing new or extending the existing facilities, rather than improving the human resource capacity. The present political environment seems promising for a higher priority being given to health. Health professionals need to work hard to put the health sector in the mainstream of overall development in Indonesia.

For governments and individuals alike, economic incentives resulting from an activity remain the main driving force. In the developed countries, the separation between the public and private sectors is clear. In Indonesia, it is often very difficult to do so. Historically, the low-paid civil servants were the driving force for public agencies prioritizing in capital investment, such as construction or acquisition of equipment, rather than investing in human resources. Apportioning of commissions or under-the-table payments are prevalent, but difficult to prove. Under the circumstances, it is very difficult to expect that public health functions like routine disease surveillance, monitoring environment risk factors or malnutrition cases might be conducted regularly as expected unless there is some degree of moral obligation or motivation. Therefore, it is not surprising that communicable diseases that were supposed to be eliminated are reemerging. Polio and leprosy cases are often reported on national television or in newspapers. Indonesia accounts for the highest number of deaths due to avian influenza. This is partly attributable to the weak public health measures.

There is a shortage of health professionals including physicians and nurses in many less developed municipalities. There is simply no economic interest to work in these regions where there is no moral obligation or any economic incentive or gain. In the past, when compulsory service by new medical graduates, dentists, pharmacists and other health professionals was enforced by the central government, there was no problem in equitable deployment of health personnel to the poor and remote districts.

Under the new decentralized arrangement, the local governments have to find a way to recruit their own health professionals and it is sometimes difficult for them to do so for obvious reasons. The salary of medical doctors in the public sector, whether in big cities or remote rural areas, has remained the same, and thus, health professionals are more interested to work in big cities. There are more opportunities in urban areas to have more income, either through private practice, engaging in additional jobs, or getting commissions from projects funded by local governments. Unless salary levels in the public sector are reasonable, attracting health professionals to work in poor districts will be difficult. Reforms in public health will depend heavily on the overall reform in the public sector. Such reforms require long debates, a long process, and may take decades. New initiatives and approaches to deploy health professionals in all districts are required.

The Indonesian government, international donors and external agencies are actually aware of the above. Several projects and programmes to improve the capacity of human resources have been initiated through loans or grants from external bilateral agencies and multilateral financial agencies such as the World Bank or the Asian Development Bank. The Indonesian Health Project V implemented in four provinces, using a loan from the World Bank, the District Health System Strengthening Project implemented in nine provinces using a loan/grant from the Asian Development Bank, and the Social Health Insurance project in Central Java funded by GTZ (German Technical Assistance) are among the various health development projects aimed at improving capacity building in a decentralized health system. Under these projects, hundreds and even thousands of civil servants have been recruited and trained for graduate and post-graduate education in public health, nursing or other medical disciplines at various public and private education institutions. For example, at the School of Public Health, University of Indonesia, there are more than 600 students among the total of 3000 pursuing Bachelor, Masters, or Doctoral degrees funded by these projects.

One issue is the quality and the sustainability of professionalism by those who are pursuing higher degrees. Since the career of public servants is linked with acquiring a higher educational qualification, (a Bachelor or Masters degree), many health professionals are pursuing a higher level of education for career development, rather than enhancing professionalism. Another issue is that once they graduate and return to their offices, there is no guarantee that they will be placed in appropriate positions. For example, someone trained in epidemiology may be assigned as a director of a public hospital, and vice versa.

As part of the public system in Indonesia, each position in the health sector has a certain level or rank – whoever has the most appropriate rank will be appointed to chair a division or an office. Thus, educational background or specialty contributes little to the advancement and to the achievement of health of the people. Health professionals are more concerned about their career or income rather than avoiding or reducing health hazards in the community. It is simply a lack of economic incentives generated by the public policy and by the market. The outcome of increasing capacity of human resources may not necessarily improve health outcomes of the people. Other systems or sub-systems must also be in place to ensure that increasing the capacity of HRH will eventually improve the health of the people.

Public Health Law

Except regulations/decrees/rules, Indonesia did not have a public health law as such for many decades. The epidemic and health law

was enacted in 1992. Even where regulations existed, only a few were properly regulated. Only six of 32 government regulations, required by the Health Act of 1992, are adequately regulated. Regulation for human resources for health is one of them. It is not necessary that each article should be further regulated by a government regulation. But, there is lack of adequate regulation to ensure that everyone acquires a healthy life, like the legal basis for government action to respond to a health crisis. The general public and some public service people had questioned the role of the central or local government, who would be responsible for paying compensation for killing birds with possible infection by H5N1 virus. The slow legal development in the health sector is an indication of how little attention is paid by the government. In another case, people perceived that the impact of the Ministry of Health Decree, issued for setting standards for essential public services to be delivered by local governments is very minimal. Some local administrators felt that the health sector is the domain of local governments, and, therefore, the Ministry of Health (central government) has nothing much to do except channeling funds. It is up to the local governments' discretion to use funds to deliver health programmes. Such misunderstanding and misinterpretation of roles and functions of the local and central governments jeopardize the health of the general public. Yet, human resources for health under the decentralized health care systems are not adequately equipped to handle misunderstanding of the roles of the central and local governments in ensuring health services for everybody.

Efforts to develop the legal infrastructure are being made. A new government regulation, authorizing a Minister to regulate and to set minimum service standards was issued in January 2006. The local government must ensure delivery of services and to share – whenever and whatever possible – with other local governments in providing certain public and personal health services. This new regulation is an attempt to provide a more solid basic infrastructure of public services. However, the economic incentives for local governments to undertake certain public health measures or to provide essential health services to the community remain undefined. Accordingly, incentives for HRH to ensure that the new regulation will be effective to deliver essential public health services in Indonesia have yet to be formulated.

Without a clear definition of the role, function, and financing responsibility of the central and local governments to ensure horizontal equity across various fiscal capacities of local governments, the policy on human resources and public health measures will heavily depend on the leadership and inclination of elected officials at local levels. There are a few successful cases where elected officials have strong commitments to public health. Such examples include: the municipal government of Musi Banyu Asin in South Sumatra, municipality of Lebak in Banten, and the municipality of Jembrana in Bali who have good public health and human resource policies to ensure better health for the people. Efforts to educate elected officials and to facilitate their understanding and commitment, such as intercity study tours to share experience with excellent public health infrastructure in and out of the country should be strengthened. International organizations such as WHO and others should play a greater role in educating government officials to motivate them and to get their commitments on public health.

Production Capacity

With the Ministry of Health predicting the large number of HRH needs and with an open education policy for establishment of

undergraduate, graduate and post-graduate educational institutions, many health professionals and even the business community see these as big opportunities for them to exploit. Within the last five years, Indonesia has experienced a massive growth in the education programmes offering undergraduate, graduate and post-graduate programmes in medicine, nursing, and public health and other health-related subjects like health economics, phamacy, environmental and occupational health. The number of institutions offering bachelor's degree in public health, nursing and allied health tripled, compared to the previous three decades. The growing number of education institutions in health and allied health sciences is partly attributable to decentralized governments where local governments, especially at the provincial level, see that they too should have medical, nursing, or public health schools. In addition, some public officials contribute to easing licensing of new educational institutions, both public and private. The private sector in Indonesia is increasingly seeing education as a profitable sector. Legally only not-for-profit organizations are allowed to establish educational institutions. In practice, the private sector is willing to invest millions of dollars to capture the high demand for education, including nursing and public health.

This rapid proliferation of health education institutions helps in filling the gaps for the required number of health professionals. The Ministry of Health has estimated that by 2010, the country would need annually about 500 new medical specialists, 7000 family physicians, over 10 000 public health professionals and sanitarians each. The prediction was simply based on the ***desired population ratios*** rather than on ***actual demand*** by the public and private sectors. Even with conservative estimates, if each public health education programme could produce, on average, 200 bachelors in public health or sanitarians, the required needs of HRH would not be fulfilled by 2010. In addition, even if the institutions could produce adequate numbers, their absorption across regions would not be proportionate to the population. Based on the previous experiences and current data, it was observed that the distribution of health professionals was always skewed to the big and rich urban areas. With weakness or absence of national public health law, through which public service could be enforced, the problem of imbalance of HRH remains unsolved. If the distribution of HRH is left to wide-open market economy systems, there will always be inequity across regions. The market mechanism is simply dominated by economic incentives, and therefore, it would attract HRH from more prosperous regions. While the utility function of individual health personnel may not be merely on economic incentives, evidence shows that economic incentives predominantly drive individuals to urban settings and to move from one area to another or from one office to another. So, the biggest challenge for Indonesia is how to formulate morale and material incentives for HRH in order to deploy them in the remote and in the less-prosperous regions.

Another potential problem is competition among the educational institutions by lowering tuition fees in order to get more students at the expense of quality. If this occurs within the next 5–10 years, Indonesia will have an over-supply of low-quality HRH. With the high prevalence of the degree-conscious culture in Indonesia, especially among parents and youth, this unhealthy competition could jeopardize the professions in the future. There is also the possibility that, in the short run, these institutions will not have enough economic incentives, and that could lead to a slow-down in production. Based on basic economic theory, over-supply of human resources may produce a more efficient

market and lower labour costs. Again, in the health sector – especially in medicine, the more efficient and lower costs will not happen due to asymmetric information of medical services. The market can produce more efficient and higher quality products or services if there is no asymmetric information. Thus, production should be controlled by rigid accreditation to ensure quality of graduates. Presently, in Indonesia the culture of accredited quality education in the medical field is low. In addition, there are some doubts in the centralized accreditation process that could ensure real quality of education. Regional accreditation may be more effective to control quality.

How to move forward and adapt appropriate curricula to cover new public health hazards, risk factors, social determinants, and new technologies, is another concern, keeping in mind the growing number of educational institutions producing health professionals. The education system in Indonesia is moving towards modernization over time to adapt with changing needs and demand for specialization. There is criticism that appropriate curricula for health professionals are not keeping pace with the paradigm shift in health conditions of Indonesia and the world at large. The market for health services is growing faster and thus, is pushing educational institutions to rapidly adapt to the market, often affecting the quality of personal or public health services.

Bringing foreign health professionals to Indonesia is another viable option to meet the shortage of human resources. This option actually faces two difficult issues. Firstly, Indonesia needs to satisfy and accept the quality of competencies of foreign graduates. Since the National Accreditation System or setting Competency Standard has not been implemented yet, there are some doubts that foreign graduates could fulfill the expected quality of services. Therefore, the door for foreign health professionals in medical and nursing services remains closed. Secondly, since the salary level in the public sector in Indonesia is very low, most foreign graduates might be attracted to work in the private sector that provides them with adequate economic incentives. If this room is open, foreign graduates will only add to the increasing health care costs rather than ensuring equity across regions. However, Indonesia needs to look into this matter seriously since the trade liberalization efforts have to be made under WTO/GATS Agreement.

"Vigilant Village for Health" as a Public Health Initiative

To overcome potential problems in ensuring adequate and equitable health services, including public health services, the Ministry of Health in 2005 introduced a new initiative known as "*Desa Siaga (*Vigilant Village for Health)". Every village is supposed to be deployed with appropriate human resources for health (HRH) to deal with health problems of the community. Simple medical ailments would be handled by local HRH. More serious health problems should be referred to a higher level of health care providers. In addition, potential health hazards will be regularly monitored and tackled. In order to ensure that villages are fully prepared to deal with health hazards and to provide appropriate health care, the MOH is planning to deploy 70 000 appropriate health professionals, mostly consisting of a nurse or a midwife, a sanitarian, and a nutritionist for each village.

Despite weak evidence directly linking the current increase in the reported malnutrition cases after implementing the decentralized health systems, it is understood that there has been a lack of continuous surveillance and promotion of nutrition. The former successful programme like *Posyandu* (integrated maternal and child care at village

level) is no more implemented. Therefore, sending a nutritionist to every village is expected to ensure early detection and management of malnutrition cases. In addition, a sanitarian trained to assess environmental hazards, along with a simple surveillance skill, will be able to report potential health risks and to take simple actions to prevent an outbreak of communicable disease(s). A nurse or a midwife is expected to professionally handle the improvement of maternal and child health, and to ensure Indonesia meeting the MDGs by reducing maternal and child mortality. In the last three decades, Indonesia has been deploying a young medical doctor on mandatory service to each sub-district comprising 15–30 villages. By deploying the above three key health professionals, the Ministry of Health believes that in the future, infant, child, and maternal mortality could be reduced substantially. In addition, communicable diseases could be controlled more efficiently and effectively. In case medical care is needed, the Ministry of Health, within the framework of the National Social Security Law, could pay the contribution to insure 60 million people (about 30% of the poorest population) via the National Health Insurance Corporation (*PT Askes*). This national scheme could cover the medical expenses, which, in Indonesia, are not free at point of delivery, and cover even expensive medical procedures such as haemodialysis and cancer treatment.

Conclusions

Indonesia is encountering massive changes in public functions, including the health sector, from centralized to decentralized systems. Since perception and understanding on the nature and the benefits of decentralized health systems, especially personal and public health, policies and programmes, vary widely across regions, competition to get a bigger pie of the government budget has left the health sector relatively under-funded in most regions. This lack of priority has increased the risk of poorer health status of the already chronically under-funded health sector in Indonesia. The Ministry of Health has anticipated such a danger of neglected public health services, undertaking regulation measures such as issuing minimum health care/service functions to be delivered by local governments. In practice, most local governments have difficulties in fulfilling the minimum functions due to lack of financial and human resources. High disparity in fiscal capacity across regions and a severe shortage of good health personnel who have moved to the central government offices, have made the risks of worsening health status inevitable.

In the mean time, the severe shortage and huge gaps between the present and estimated supply of human resources (as measured by conservative population ratios) have been coupled with the sprouting of multiple education institutions throughout the country. The sudden increase in the number of education institutions trying to meet the expected demand poses other threats related to quality and equity of health care across the regions. It is argued that increasing supply of health personnel produced by the rapid increase of educational institutions, coupled with the restricted market option that is dominant in Indonesia, will deepen inequity across regions. In addition, non-existence of comprehensive national public health law may add uncertainties in improving the health status of the people of Indonesia. To address the urgent public health problems, the Ministry of Health has introduced "*Vigilant Village*", aimed at expanding health promotion, ensuring disease prevention and providing simple medical care for villagers. Serious policy debates with evidence-based information on the future scenario of human resources for health in decentralized health systems in Indonesia are the needs of the hour.

References

1. Bossert, TJ, *Decentralization and equity of resource allocation: evidence from Colombia and Chile*, Bulletin of WHO 2003: 81: 95-100.
2. The Ministry of Health, Healthy Indonesia 2010, Jakarta, 1995.
3. Ascobat Gani, *Studi Desentralisasi Kesehatan, Mimeograf*, Jakarta, 2005.
4. The Ministry of Health, Jakarta. http://www.bppsdmk.or.id/data/pupns.xls. Accessed February 16, 2006.
5. Ilyas, Y., *Study on Specialist Distribution in Indonesia, Momeograph*, Jakarta, 2004.
6. The Ministry of Health, Decree on Minimum Obligatory Function of Local Governments, Jakarta, 2004.

Annex 1

Current and Estimated Number of Health Workers needed in Indonesia, Ministry of Health, 2004

Types of human resources	Number of HHR needed by 2010	Expected ratio/ 100 000 pop in 2010	Supply HHR by 2003	Additional HHR needed by							
				Year 2004	Year 2005	Year 2006	Year 2007	Year 2008	Year 2009	Year 2010	Total HHR needed 2003 to 2010
Medical specialists	14 156	6	11 000	422	431	441	451	460	471	481	3156
Family physicians	94 376	40	37 531	7513	7709	7909	8113	8320	8533	8749	56 845
Dentists	25 953	11	9177	2216	2274	2334	2394	2456	2519	2584	16 776
Nurses	276 049	117	233 116	5781	589	6012	6129	6248	6371	6495	42 933
Midwives	235 939	100	61 000	23 091	23 704	24 329	24 966	25 615	26 279	26 955	174 939
Dental nurses	70 782	30	5869	8559	8789	9024	9264	9508	9557	10 011	64 913
Pharmacists	23 594	10	7646	2106	2162	2218	2276	2335	2395	2456	15 948
Assistant pharmacists	70 782	30	26 703	5824	5977	6132	6291	6452	6617	67	44 079
Public health professionals	94 376	40	3912	11 926	12 248	12 910	12 910	13 251	13 599	13 954	90 464
Sanitary workers	94 376	40	12 461	10 804	11 093	11 389	11 690	11 997	12 311	12 631	81 915
Nutritionists	51 907	22	10 685	5439	5584	5732	5883	6036	6194	6354	41 222
Physiotherapists	9438	4	3072	841	863	885	908	932	956	980	6366
Medical technicians	35 391	15	28 255	955	976	997	1019	1040	1063	1085	7136
Total	1 097 119	465	450 427	85 477	82 399	90 312	92 294	94 650	96 865	92 802	646 692

Annex 2

The Minimum Obligatory Functions for the Health Sector and the Related Target to be achieved by 2010, in Indonesia

(1) Maternal and Child Health:

- Ninety five per cent pregnant mothers have antenatal care four times;
- Ninety per cent births are attended by trained health professionals;
- One hundred per cent high-risk pregnancies are referred;
- Ninety per cent of neonates are examined by health professionals;
- Ninety per cent babies are examined by health professionals;
- One hundred per cent low-birth-weight babies are taken care of.

(2) School and pre-school health programme:

- Ninety per cent of pre-school and school-age children are monitored for health care;
- One hundred per cent elementary school students are examined, and
- Eighty per cent teenagers have access to health services.

(3) Seventy per cent couples actively practise family planning.

(4) One hundred per cent villages achieve Universal Child Immunization.

(5) Health care:

- Fifteen per cent people undertake outpatient care, and
- One-and-a-half per cent people undergo inpatient care.

(6) Fifteen per cent of services are mental health services.

(7) Monitoring under-five children:

- Eighty per cent under-five children show improvement in weight, and
- Less than 15 per cent children are underweight.

(8) Nutritional services:

- Ninety per cent of children under five receive Vitamin A twice;
- Ninety per cent pregnant mothers receive iron supplement tablets;
- One hundred per cent poor families who have underweight babies, receive supplementary milk, and
- One hundred per cent under-five children who suffer from severe malnutrition receive care.

(9) Basic Obstetric and Neonatal Emergency Care

- Eighty per cent mothers and neonates have access to blood transfusion in referral care;
- Eighty per cent high-risk pregnant mothers receive care, and
- Eighty per cent high-risk neonates receive care.

(10) Ninety per cent of health facilities with adequate emergency care are accessible.

(11) Surveillance of outbreaks and severe malnutrition:

- One hundred per cent of villages having outbreaks are handled within 24 hours, and
- Eighty per cent of sub-districts are free from nutritional risks.

(12) Polio prevention:

- Prevalence of acute flaccid paralysis (AFP) rate per 100 000 children under 15 years of age less than 1.

(13) More than 85 per cent sputum-positive tuberculosis patients are cured, and

(14) One hundred per cent under-five children who suffer from pneumonia get treatment.

(15) Prevention of HIV/AIDS:

- One hundred per cent cases of persons with HIV/AIDS are treated, and
- One hundred per cent cases of sexually-transmitted diseases are treated.

(16) Prevention of dengue haemorrhagic fever; 80 per cent cases are treated.

(17) Prevention of diarrhoea; 100 per cent under-five children suffering from diarrhoea are treated.

(18) Seventy per cent institutions have an environmental health programme.

(19) Ninety five per cent houses and premises are free from *Aedes aegypti.*

(20) Eighty per cent of public facilities meet the minimum standards.

(21) Promotion of healthy lifestyles:

- Sixty five per cent houses meet the health requirements;
- Eighty per cent babies are on exclusive breast-milk feeding;
- Ninety per cent villages have access to iodized salt, and
- Forty per cent of Posyandu achieve Level one.

(22) Fifteen per cent communities promote and prevent substance abuse and use of psychotropic substances.

(23) Provision of drugs and medical supplies:

- Ninety per cent health facilities have adequate drugs;
- One hundred per cent health facilities provide essential drugs, and
- 100 per cent facilities provide generic drugs.

(24) Ninety per cent prescriptions are for generic drugs.

(25) Health care financing: 80 per cent of people are insured.

(26) One hundred per cent of poor and vulnerable families are insured.