DOTS STRATEGY IN THE CONTEXT OF INDONESIAN HEALTH SYSTEM

Introduction

The need for better health systems has always been on the top priorities list for every unsolved problem in health and health care. It is a common knowledge that without a well functioning health system, the possibility of achieving better health outcomes will never be accomplished (Dussault & Franceschini, 2006; WHO, 2007). There are several features that distinguish well functioning health system and those who do not. These are the ability to deliver services to those who needed them, with an adequate support of health workers doing so in a stable and on going program with a secure budget (WHO, 2007).

Tuberculosis has long been recognized as a health problem all over the world, especially in developing countries, including Indonesia (Dye & Floyd, 2006; WHO, 2008). There are three interventions against Tuberculosis, vaccination, treatment for latent infection and treatment of active infection, known as DOTS (Direct Observed Therapy Short-Course) strategy (Dye & Floyd, 2006).

This paper will analyse the challenges and possible resolutions needed to address the problem of Tuberculosis especially implementation of DOTS strategy in relation with the health system in Indonesia. The first part will describe the components of health system followed by description of Tuberculosis as a health issue in Indonesia. Then it will analyse the key challenges of DOTS strategy to control Tuberculosis related to Indonesia's health system. The last part will be recommendations on key steps to improve the health system in Indonesia and ends with conclusion.

Health System

World Health Organization (WHO) defines health system as

> *"A health system consists of all organizations, people and actions whose primary intent is to promote, restore or maintain health. This includes efforts to influence determinants of health as well as more direct health-improving activities"(2007).*

Based on this definition, health system is a wider matter that not only belongs to the government to deal with, it is everyone's responsibility. WHO also describe "six building blocks" that comprises health system; these are service delivery, health workforce, information, medical product and technologies, financing and leadership and governance (2007). To be specific, a well functioned health system should be able to make services available, affordable and accessible to those who need them the most. Aside to that, these deliveries were done by the right and proficient health workers that are able to use the available resources in any situations. This health system should have the capability to provide access to both medicines and the appropriate technologies. The underlying forces of these deliveries would be a good health information system on health determinants, status and the performance of on going programs, a sufficient amount of funds for the sustainability of these programs, the providers and consumers and a good governance to guarantee the implementation of policies and supervision (WHO, 2007). These components are interrelated one another which needs cooperation to work properly and a change in one or more components will have consequences in other components.

The general objective of a well functioning health system is to improve both health and health equity with the right and efficient approach by applying the principles of gaining more of existing resources and money wise at the same time (WHO, 2007).

Indonesian's health system

The Republic of Indonesia is one of the world's most populous countries, with approximately 228,864,000 people in this archipelago country (WHO, 2008). Two third of Indonesia's area is water territory and the rest is land territory, leaving the government with a hard duty to balance everything throughout these range of 18,000 islands (USAID, 2007 & STPBH, 2007). The National goal on health is reflected in the objective of "Healthy Indonesia 2010' and one of the focuses is *"to maintain and enhance quality, accessible and affordable health services"* (MoH, 2007).

In the year 2001, Indonesian government officially change the way they run the country from centralized governments to decentralization based on two laws, Law No.22/1999 on Local governance and Law No.25/1999 on Financial Balance Between the Central and Local Governments. The governments are now divided into three levels, national, provincial and district levels (MoH, 2007; Kristiansen & Santoso, 2006). These changes has made influence in all sector including the health system and the direct impact is on the on going health programs implementation. The lack of guidelines of implementation in provincial and district levels led to incomprehension in these levels (MoH, 2007; STPBH, 2007; Kristiansen & Santoso, 2006).

The health services system in Indonesia highlights the importance of primary health care, with primary health centers (PUSKESMAS) in the front line supported by referral hospitals (Kristiansen & Santoso, 2006; STPBH, 2007). Aside to government-owned hospitals, wide range of health services are also delivered by private hospitals and practitioners, including the national Tuberculosis programs (STPBH, 2007). However, lack of coordination between health service providers has also arisen as an issue in Indonesia.

Tuberculosis and DOTS strategy in Indonesia

Every minute, there are approximately one new cases of Tuberculosis in Indonesia and as a consequence, Indonesia is now in the third place out of 22 countries with a high-burden of Tuberculosis, with approximately 540,000 new cases in 2006. The estimated TB incidence rate is 245 per 100,000 people and approximately 7.7 % of the total disease burden is due to this highly-infectious disease (Soemantri et al, 2007; USAID, 2007). Tuberculosis has been a long recognized cause of death in Indonesia, ranking in second of ten leading diseases causes of death in 1992 and rank in third place in 2001 (Soemantri et al, 2007; STPBH, 2007). The number of deaths in 2006 is approximately 38 per 100,000 populations per year (WHO, 2008).

In 1999, the governments have made Tuberculosis as a national health problem and launch the "National Integrated Movement to Control TB (GERDUNAS)" involving all stakeholders as a cross-sectoral movement, however the effectiveness of this program still need to be questioned (MoH, 2007).

DOTS strategy was first introduced in Indonesia in 1992 with five main components: political commitment, accurate diagnosis through sputum microscopy, treatment compliance, uninterrupted TB drug supply and reporting and recording systems (MoH, 2007; STPBH, 2007). Within 13 years of time, in 2005 its coverage has reached 98% with a treatment success rate of 90%, marking Indonesia's success in reaching the 85% global target of DOTS success rate (USAID, 2007 & STPBH, 2007). However, these numbers varies among provinces, for example

the number of success treatment rate in Bali exceeds 95% while Papua only achieved 15.7% (MoH, 2007). Case detection rate of smear-positive cases under DOTS in 2005 is 74% which has achieved the global target of 70%. Based on these numbers, Indonesia is the first country in South East Asia that has successfully reached the global targets (STPBH, 2007). However, WHO (2008) has shown a decrease in this number for 2006 to 73%. After these achievements, the next step for Indonesia is how to make the program sustainable and improve both the quality and accessibility of the program to every citizen, which is reflected in its new plan for 2006-2010 "Equitable Quality DOTS for all". Further sustainability of this program relies deeply on the improvement of Indonesia's health system (STPBH, 2007).

Key challenges of the Implementation of DOTS strategy on Indonesia's health system

Despite all the success, Indonesia is currently facing several important issues regarding its National Tuberculosis Program. An important question to be raised is about the accuracy of the facts and figures of Tuberculosis in Indonesia, given the thought that many of the estimates were obtained from old data resources and assumptions were made for many data which are not available. Another important point is the number of hidden patients, those who do not seek treatments, those who find treatments in rural clinics which are not reporting their findings to regional hospitals, or even those who seek treatment to small clinics with no capability for diagnosing thus treating TB (Wahyuni et al, 2007).

Another issue that the country is facing is how to set their priorities within the program and also make every parties that want to contribute in the program have the capability in doing so. Research shown that although about a third of the hospitals all over Indonesia are engaged in Tuberculosis control program as "DOTS Hospital", many of them do not have the appropriate training to run the program, resulting in an ineffectiveness of the program. Poor Tuberculosis management practices are also seen in government owned and private hospitals, especially for diagnosis purposes (STPBH, 2007). The management of coordination in the activities –including referral system- between and within hospitals and also between hospitals and smaller health centers, including private practitioners, has resulted in difficulties in the monitoring and evaluation process. Furthermore, the number of patients and quality of treatment in the non-DOTS hospital remain unknown, highlighting the importance of intensification of existing coordination between hospitals (Uplekar et al, 2001; STPBH, 2007; World Bank, 2008). Private practitioners have also complained about the lack of disseminations of the guidelines for the national TB program, resulting in lack of adequate information to run the program (Uplekar et al, 2001).

Human resources have known as "the most important aspect of health system" (Narasimhan et al, 2004). Webber and Kremer (2001) stated that before patients would think about the availability of treatment, the health system needs to ensure that these patients can see a health care provider they need to first be diagnosed and received prescription.

The number of health workers in Indonesia -especially physicians- has been declining from 1999 to 2001. In the year of 2001, the number of population per 1 physician is 7987 and the number of nurses per 10,000 population is 13 (MoH, 2007). According to World Health Statistics (2008), although the number of physician has been increasing afterwards (in 2006 there are approximately 29499 physicians) the number of population per 1 physician only decrease by 227 (7760 population/1 physician).

It is a very difficult task for the government to ensure an equal distribution of health workers, especially doctors in Indonesia (Dussault & Franceschini, 2006). Most Indonesian medical doctors want to work in Java Island, since the rural areas are not promising a bright future for them like Java (Chomitz et al, 19998). There are several policies regarding this problem, the first one is by assuring the career of doctors as a civil servant and opportunity for specialist training after they completed the rural service contract within one to five years based on the location. In 1992, the policy changes stating that doctors would only receive higher incentives if they work in rural areas. After the failure of implementation on this policy, in 1996, the government combines the two policies and states that it is a compulsory for medical schools graduates to work in rural areas from which they will be benefited in two ways. First, those who work in rural areas will get higher incentives and shorter period of contracts. The second one is afterwards; their tuition fee for specialist training will be reduced to one quarter (Chomitz et al, 1998). These policies, however, were thought to have been used by the medical doctors who were only interested in the specialist training assurance and instead of working as a public health practitioner in rural areas, they leave after the contract is finished (Dussault & Franceschini, 2006). Kristiansen & Santoso also stated that despite all the policies and regulations, many of these young doctors have find ways to deceive the system (2006).

Of the available health workers, many of them do not have the required competency to run the national TB Program. Wahyuni et al (2007) draw attention to nurses in East Java province of Indonesia which serves in the primary health centers (PHC), the survey has revealed that the level of knowledge about Tuberculosis symptoms and detection is not sufficient in all PHCs, which may explain the low detection rate in this area. This problem may arise due to lack of training in those matters and also the high workload in the PHCs. Alisjahbana et al also underline the importance of adequate knowledge among health workers based on the evidence from their research that with better instructions directed towards patients regarding sputum handling will improve the detection rate as much as 15% (2005).

The monitoring of compliance of patients is also important because combined with the unavailability of the required amount of drugs to complete the therapy in each individual will bring out the risk of Multi Drug Resistant and Extreme Drug Resistant (Pecoul et al, 1999; MoH, 2007). WHO (2008) shown that in 2006, the percentage of MDR-TB cases of all new TB and of previously treated TB cases are 2 and 19 percent respectively, showing the growing burden of drug resistance. However, there is no data about the management of MDR/XR Tuberculosis in Indonesia, which shown another drawback of the national TB program, the registry system. Many of the registration, reporting and recording of cases especially those in rural areas are still done by paper-based register. Moreover, these recording and reporting systems are not centralized at the national level (STPBH, 2007; MoH, 2007; World Bank, 2008). Although Indonesia already has a policy regarding its national information system (Ministry of Health Decree No. 468/MENKES-KESOS/SK/V/2001) to support the change from centralized to decentralized, its appropriate utilization has not yet recognized (MoH, 2007).

In 2006, there are approximately 4855 laboratories performing smear microscopy, however their quality in performance has never been surveyed (WHO, 2008). In many areas, a policy and guidelines for an improvement of laboratory quality and network is definitely needed in order to improve the quality of case detection. There has been a huge discrepancy in the number of cases detected in urban and rural areas that need to be eliminated (STPBH, 2007).

From the figures given by STPBH (2007) the number of donor's support to different provinces in Indonesia have increase dramatically, starting from only 16 provinces supported by donors in 2004 to all 33 provinces in 2007. Having leaned on the accountability of funding from donors, the problem with sustainability of the program arise when one of the major donor, Global Fund have suddenly stop their funding due to poor management of funding by Indonesia. Although attempts have been made to overcome the lack of funds, the impact is inevitable to be seen. Many activities have to be postponed resulting in disruption of sustainability of both the program and the willingness of health workers to do so. The amount of funding that were supposed to be assigned for health -including Tuberculosis programs- is 15% of the public funding, however, in facts, these percentage never surpass 5% and often times 0%(STPBH, 2007).

Recommendations

One of the key to success in controlling the number of Tuberculosis in Indonesia is a well functioning health system, suggesting a strong primary health care implementation supported by outreach programs, adequate funding and proficient health workers. It will also rely on the management and referral system, recording and coordination between the entire stakeholder involved, either private or public (STPBH, 2007, Uplekar et al, 2001). To be able to achieve this, the health system needs to be strengthened.

Indonesia needs to develop a better guidelines and manual for case finding, treatment and follow up of cases including the toolkit for trainings and set up of new DOTS centers. A special taskforce is needed to develop a policy about people in rural areas and other vulnerable groups (Gwatkin et al, 2004; STPBH, 2007). The program also needs to improve coverage areas and select successful existing hospitals as role model for all hospitals and community health centers. The qualities of Tuberculosis campaigns and guidelines have to be strengthened all through Indonesia including the importance of treatment and also HIV/TB dual infection (Uplekar et al, 2001; STPBH, 2007). More solid teams to ensure the delivery of services should be established in district and provincial levels (WHO, 2008).

To address the human resources issue, ensure a sufficient amount of proficient health workers at all levels to implement the program and improve community and patients involvement in the program to enhance the ownership of the program from all level of community (STPBH, 2007). This can be done by providing an appropriate technical and managerial training for the health workers and the community workers (WHO, 2003). A stronger enforcement of policies and regulations related with health worker distribution need to be started. Alternative solutions like recruiting medical students from rural areas to ensure they will go back and provide services in those areas, through scholarship or training programs (Chomitz et al, 1998).

The next step is to improve the coordination within and inter department and hospitals about detection, treatment and recording of cases according to International standards which already describe in the national guidelines of Tuberculosis need to be implemented (STPBH, 2007; WHO, 2008). This has to be supported by a good quality of data management and data bank, starting with all Tuberculosis units using electronic registry which are centralized in the national registry system to produce annual report. This information shall follow the standard form of reporting to provide the facts and figures of Tuberculosis program for the intention of

periodic monitoring, evaluation and information sharing (WHO, 2003; MoH, 2007; STPBH, 2007).

A manual for a sustainable system of reference in laboratory network and an enhancement in the availability and quality of sputum smear microscopy and drug susceptibility tests at central, provincial and district levels is needed. This will include training of laboratory managers, workers and other partners to work according to the Standard Operational Procedure (STPBH, 2007) and establishment of appointed regional and provincial laboratories which specialized in detection of cases needs (WHO, 2008).

The government needs to do a reallocation of national budget and reduce its dependency on external source of funding (STPBH, 2007). Advocacy to the parliament to ensure a fixed allocated amount of budget from the national government on health should be made reality (WHO, 2003; WHO, 2008). With the implementation of decentralization in Indonesia, it is crucial for provincial and district level government to also contribute as source of donors (STPBH, 2007).

The quality of supervision at all levels needs to be improved, through the implementation of a sound monitoring and evaluation algorithm. These include the periodic supervision of reported information, analysis, on going intervention programs and also funding elements (STPBH, 2007). The government is currently planning the realization of LQAS method to monitor the national TB program. Training of leadership and management capacity need to be carried out (WHO, 2008).

Conclusion

Even though the results that Indonesia has achieved so far on the national Tuberculosis program is magnificent, it is far from perfect and at high risk of interrupted sustainability.

Lack of human resources to maintain the sustainability of the program has long been realized as the basis of ineffectiveness of the service delivery. This burden is override by the management capacity in Indonesia's health system, low level of planning and budgeting in district, province and country level. Aside to that, the level of participation of stakeholders like community or NGOs after decentralization has remained low.

The National Tuberculosis Program should actively engaged in any changes or reformation in the health system, to ensure that Tuberculosis will still be on the priority list of the health system and be provided with the funding it needed. Furthermore, the government of Indonesia should improve their multi sectoral coordination and also coordination of action between the government, communities, NGOs and other stakeholders, in order to reach an "Equitable Quality DOTS for all".

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