

HEALTH PLANNING IN MALAYSIA: A CASE STUDY OF THE NATIONAL STRATEGIC PLAN ENDING AIDS 2016-2030 (NSPEA)

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ABSTRACT

Introduction: Health planning is an essential part of healthcare system whereby policies will be translated into actions. There are many health planning theories that can be used which deal with the complexity of data and addressing the questions within the process. This paper reviewed the National Strategic Plan Ending AIDS 2016-2030 (NSPEA 2016-2030) which is one of the health planning in Malaysia.

Methodology: A literature review was conducted through online database and related AIDS health planning documents in Malaysia were identified and reviewed. World Health Organization (WHO) recommendations were used as a reference tools to discuss the health planning process. Strength, weakness, opportunity and threat (SWOT) analysis was done as part of the discussion process. Recommendations are based on literature reviews and health planning documents of other countries.

Result: The Malaysia Health Planning Framework consists of seven (7) processes which are situational analysis, goal setting, prioritisation, strategy, budgeting, implementation, monitoring and evaluation. There are various approaches being used. Rational planning used in situational analysis as a tool to identify the disease burden. Incremental planning also applied where all previous performances especially from AIDS National Strategic Plan (NSP) was considered in the making of the new strategies and budgeting. Meanwhile other process was based on selected alternatives which fits into mixed-scanning approach.

Conclusion: From this case study, it can be identified that the health planning process and practices in NSPEA 2016-2030 comprises of seven (7) steps. It can be concluded that AIDS health planning in Malaysia mostly adopting the mixed-scanning planning approach. However, there are some steps and area of planning which can be benefited by adopting mixed-scanning planning.

Keywords: Health planning, Health Planning Theory, HIV, AIDS, Malaysia

1.0 Introduction

Health planning is an essential element in a country's healthcare system. Health planning can be defined as a process to produce health by creating an actionable link between needs and resources (Ardal, Butler, Edward & Lawne, 2006). The nature and scope of planning depends on the time allowed, the number of answerable questions to be addressed within the process, the resources available, and the broad political and social environment. There are many health planning theories which can be practiced. These include rational planning approach, bounded rational approach, incremental planning approach and mixed scanning planning approach (Busse, K., Mays, N. & Walt, G., 2005).

The planning cycle for health sector includes problem identification through situational analysis, problem prioritisation and analysis, setting objectives and targets, formulating strategies and interventions, determining resources allocation, preparing action plan and budget, followed by implementation, monitoring and evaluation (Chatora, R. & Tumusiime, P., 2004). In health services programme planning, it is related to a specific type of service which can be undertaken by the government (Ardal, et. al., 2006).

In Malaysia, the health planning process involves situational analysis to identify issues, gaps and challenges which is followed by prioritisation setting (Ministry of Health (MOH), 2015). Following this, Technical Working Groups (TWGs) were formed to study each prioritised issue and to propose strategies for remedial actions. From there, the desired outcomes were outlined and implementation plan will take place followed by monitoring and evaluation of the plan.

This paper reviews NSPEA 2016-2030 which is one of the health planning in Malaysia. It is a national plan that has been developed to address HIV epidemic in Malaysia (MOH, 2015). As compared to others, HIV programme is among the established health planning in Malaysia.

2.0 Methodology

The objective of this study is to discuss health planning process and practices in Malaysia based on Malaysia Health Planning Framework. NSPEA 2016-2030, health planning was selected as a case study. A literature review was conducted through online database and related documents on AIDS health planning in Malaysia were identified and reviewed. This case study was discussed based on the health planning framework which consists of situational analysis, goal setting, prioritisation, strategy, budgeting, implementation, monitoring and evaluation. WHO recommendations were used as one of the reference tools to discuss health planning process. Strength, weakness, opportunity and threat (SWOT) analysis was done as part of the discussion process. Recommendations are based on literature reviews and health planning documents of other countries.

3.0 Results

The Malaysia Health Planning Framework consists of seven (7) processes which are situational analysis, goal setting, prioritisation, strategy, budgeting, implementation, monitoring and evaluation. Details of each processes are described further.

3.1 Situational analysis

Situational analysis assesses the current health situation at various levels of organisation which includes the national, state and district level. According to WHO (2016), situational analysis is an assessment of the current health situation and is fundamental in designing and updating national policies, strategies and plans. A strong situation analysis should be comprehensive and consists of various information as below (WHO, 2016):

- i. Social determinants of health which include the current and projected disease burden
- ii. Current and projected demand of services and social expectation
- iii. Health system performance and performance gaps
- iv. Capacity of the health sector to respond to current and to anticipate future challenges
- v. Health system resources (human, financial, informational) and resource gaps
- vi. Stakeholder positions

Based on WHO recommendations above, NSPEA 2016-2030 has included most of the situational analysis steps as discussed below.

3.1.1 Disease Burden

It was reported that HIV cases have been in a steady decline since 2002 in Malaysia. HIV key populations include people who are injecting drug (PWID), female sex workers (FSW), transgender (TG) and men having sex with men (MSM). Prevalence of HIV based on its geographical locations was found highest in Kelantan (44.7%) among PWIDs, female sex workers (FSW) was reported highest in Kuala Lumpur (17.1%) and MSM and TG are also highest in Kuala Lumpur which accounts for 22% and 19.3% respectively. Mode of transmission of HIV is shifting from PWID to sexual transmission. From the 2014 surveillance data, 80% of HIV transmission is from sexual intercourse and the people involved are aged between 13 to 29 years old. Children on the street were also identified as part of the key population and are vulnerable as they are at the high risk of HIV exposure.

3.1.2 Projected Disease Burden

From NSPEA 2016-2030, the team made a projection of HIV epidemic in Malaysia up to 2030 based on Asian Epidemic Modelling (AEM). It was mentioned in the document that estimated and projected number of cases by mode of transmission will have a steady decline by 2016 onwards. Based on the projected burden of disease, the team estimate the number of years needed to achieved the goal based on several alternatives.

3.1.3 Current Services & Performance

It was discussed comprehensively in NSPEA on its services and projected services. Services that were mentioned include free first line of ART, voluntary counselling and testing (VCT), TB testing, psychosocial support, nutritional support, treatment for opportunistic infections, rapid HIV test, CD4 test, treatment education to ensure adherence, needle and syringe exchange, opiate substitution therapy and others.

All of the services are made available at primary care level especially in all health clinics which have Family Medicine Specialist (FMS). This can improve the accessibility for PLHIV to all services provided in the health system. Challenges faced from previous NSP in delivering the services were discussed and future remedial actions were described in the new NSPEA document. Among the challenges that were discussed are plans for scaling up testing and treatment, challenge in getting PWIDs to adhere to OST, large gap in TB/HIV care notably in early YB screening and awareness, stigma and discrimination, challenge in collaborations between multisectoral agencies and other challenges related to monitoring and evaluation.

3.1.4 Health System Resources and Resource Gaps

NSPEA 2016-2030 elaborated clearly on its financial resources and its allocation by using the AEM model. However, resource gaps in terms of human resource capacity in the public sector to implement NSPEA 2016-2030 were not mentioned in the document.

3.1.5 Stakeholders

National Strategic Plan Ending AIDS (NSPEA) Malaysia 2016-2030 was developed through a comprehensive consultation between the various key stakeholders such as Ministry of Health, Anti-Drug Agency, Royal Malaysia Police, Ministry of Education, Islamic Development Department, Ministry of Women, Family and Community Development, UNAIDS and Non-Government Organizations.

Situational analysis of the new NSPEA 2016-2030 partially followed all the six criteria as suggested by WHO. Capacity in terms of human resources of the health sector to respond to the current problems and to anticipate future challenges were not discussed in the NSPEA 2016-2030. Human resource is an important component in all health care planning to ensure a quality health outcome. It was reported that a good human resource planning could improve health services quality in an organization (Kabene, Orchard, Howard, Soriano and Leduc, 2006). Various collaborations between government and multi-sectorial agencies such as non-governmental organizations (NGOs) and civil society were explained in the document as part of government's initiatives to anticipate the lack human resources in the health sector.

Situational analysis for NSPEA 2016-2030 most likely uses the rational planning approach as surveys have been done to identify the disease burden in a comprehensive manner. Another approach would be the incremental planning approach, where all previous performances especially from NSP were considered in the making of the new strategies.

3.2 Goal Setting

The vision of the National Strategic Plan for Ending AIDS is 'Zero new infections - Zero discrimination - Zero AIDS related deaths'. From this vision, a goal of Ending AIDS by 2030 [90% reduction of new HIV cases from 2010 based on Asian Epidemic Modelling (AEM)] was set up (MOH, 2015).

The first fast tracking phase of the NSPEA 2016-2020, aims to reach the 90-90-90 targets: 90% of key populations tested and knowing their results, 90% of those detected as HIV positive placed on ART, and 90% of these adhering to treatment with suppressed viral load (MOH, 2015). During this phase, it also aims to reach 80% of key populations with combination prevention by 2020. The second phase of the NSPEA from 2021 to 2030 aims to end AIDS as public health threat, consolidating the gains of the fast tracking period and reaching the 95-95-95 targets: 95% of key populations tested and knowing their results, 95% of those detected as HIV positive placed on ART, and 95% of these adhering to treatment with suppressed viral load, as well as reaching 90% of key populations with combination prevention (MOH, 2015).

Although there are a number of challenges and gaps identified from the situational analysis these targets are actually adopted from the Joint United Nations Programme on HIV and AIDS (UNAIDS). Most of the targets are based on the challenges faced at the local level, which later are followed by the goal setting which is supposed to be aiming at solving the problem that are being identified and isolated from the situational analysis. This indicates that it fits into the mixed-scanning planning approach where the goal setting was based on the selected alternatives.

3.3 Prioritisation

Prioritisation is the process of translating strategic objectives into operational priorities and help the organization deliver the objectives in its strategic plan (AECAPM, 2010). In the NSPEA 2016-2030, it is committed to maximise the impact of the response by investing sufficiently and strategically to obtain the best returns through priority setting, and will be based on what is workable in local context. Projections for epidemic development and estimated resources required for Ending AIDS have been shown by AEM modelling. AEM is a tool that provides a picture of past and future epidemic (MOH, 2015). It offers opportunity to explore the effectiveness of different programmes and policies alternate by varying into behaviour and model parameter (Brown, T. & Peerapatanapokin, W., 2004).

Prioritisation was established based on consultation of MOH with the stakeholders, past experiences in the HIV NSP 2011-2015 implementation, current Malaysian HIV epidemic, information and research data for government, academic institutions, civil society and community based organisation. It weighted many factors and most importantly evidence-based information in planning the policy based on priorities workable at local setting. Three (3) key concepts (stakeholders, assessment criteria, and target audience) are required in priority-setting process and actual challenges of priorities should be of value-based (WHO, 2016). These were covered in the NSPEA 2016-2030 and was similarly done in Thailand (Thailand National AIDS Committee, 2014).

In Malaysia, the first priority is testing and treatment which include “Ending AIDS” by 2030 through 95-95-95 target, fast tracking by 2020 through 90-90-90, technical working group study options for intensifying test and treatment, technical working group study options to expand initiation of ART immediately after HIV detection regardless of CD4 count and additional resources and capacity building. Second priority is harm reduction programme which include needles and syringes exchange programme (NSEP), Methadone Maintenance Therapy (MMT) and condom exchange. Third priority is to reduce sexual transmission by having effective HIV message for HIV prevention. Fourth priority is to reduce the stigma and discrimination by providing adequate social and legal protection.

3.4 Strategy

The national strategic plan for HIV was guided by previous strategic plans added with formulation of four main strategies (NSPEA, 2015):

- i. HIV screening and treatment to end AIDS
Through decentralisation, the government has an access to HIV patients through primary health care.
- ii. Improving the quality and coverage of prevention programmes among the key populations
Sustaining and scaling up of the existing prevention interventions like Needle Syringe Exchange Programme (NSEP) and Methadone Maintenance Therapy (MMT) remains a priority and will be further intensified, as risk of HIV infection among PWID can be significantly reduced with the use of opiate substitution treatments (Sullivan, Metzger, Fudala, & Fiellin, 2005). Condoms exchange reduce HIV incidence by 80%. It may encourage people who use condoms to practice safe sex and have fewer partners, thereby reducing their HIV risk (Wilkson D, 2016)
- iii. Reducing stigma and discrimination of PLHIV
Multi-sectorial collaboration and coordination between civil society and private sector should be strengthened. The physical, mental, social, spiritual, religious and economic needs of the PLHIV should be taken care of.
- iv. Ensuring quality strategic information by policy makers through monitoring, evaluation and research
Strong governance and coordination of the national AIDS programme by MOH will ensure harmonisation and alignment of all stakeholders involved in the AIDS response.

In NSPEA 2016-2030, many strategies have been shortlisted and the main strategies were detailed which are similar to recommendations from the Centre for Disease Control and Prevention (CDC). Screening of all adults and adolescents for HIV infection were done at least once, whether or not clinicians perceive that a patient is at risk, and repeated screening is done at least annually for people at high risk (Malina, Frieden, Foti, & Mermin, 2015). In this step, mixed scanning approach was used.

3.5 Budgeting

For NSPEA 2016-2030 budget planning, a technical working group was formed. It consists of experts in various field from MOH, representative of civil societies and UNAIDS country manager by using AEM as described earlier. The group has projected budgeting for six scenarios (MOH, 2015). From the AEM, impact analysis was done based on current intervention and several alternatives.

In planning the financial resources for NSPEA, government is the main contributor for the funding contributing 94% of the total budget. The expenditure covers for ART treatment, 65% and 15% for prevention programme. Other sources of funding are from international and the private sector which includes the limited Global Fund Grant (6%). The Global Fund new funding model have shifts away from round based system to new allocation based funding model (The Global Fund, 2015). The new funding system allows countries to be funded according to disease burden as well as income level (according to the World Bank income classifications). Thus, this improved predictability of funding. Based on previous model, as Malaysia is approaching a high income status, the grant will not be available in the future. The government fund is channelled through Ministry of Finance to the Ministry of Health. For NGO related programmes, the fund is mediated through Malaysian AIDS Council (MAC).

The first analysis of the AEM is the impact of the epidemic based on the analysis. The ending AIDS option will take a significantly shorter period of time compared to other options. The second analysis is the impact on the resource needs. Although the initial investment for ending AIDS is high (USD 429 million), looking into long term basis it will be more cost effective, which is about USD 60 million between 2025 and 2030. The measures being used are annual reduction of new cases, treatment cost saved, and DALY saved. Ending AIDS option will save more lives, having the most cost-benefit in terms of DALYs. Based on the AEM analysis, the ending AIDS scenario was chosen for NSPEA and the financial resources required was estimated. The alternatives were compared to current practice, thus, it follows an incremental planning approach where decision makers projected the extent of each alternative whether it meets the objectives and the associated cost.

The AEM modelling follows a mixed-scanning planning approach, where the detailed amount of asset and time spent, is experimented with various combinations across time (Etzioni, A., 1967). Thailand follows a similar suit, in which the approach for budgeting was done in a detailed manner. The process for budgeting includes not only for programmes, but also for strategic information, monitoring, and evaluation and was calculated for each year (Thailand National AIDS Committee, 2014). Therefore, the investment across time can be seen for decision makers to make decision.

3.6 Implementation

Effectiveness, efficiency and timeliness are the components that need to be considered in implementing any health programmes. The effectiveness is measured from activities output and must achieve the target that has already been planned (Chatora, R. & Tumusiime, P., 2004). NSPEA 2016-2030 was developed based on evidence driven national priorities and the

mid-term review (MTR) 2013 which identify challenges that need to be addressed. In order to achieve the targets, the strategies are translated into several action plans which have been developed according to prioritisation of the main problem, gap and challenges.

Efficiency is garnered through several approaches that will be carried out through a comprehensive consultation process: strengthening the service of care by integrating public-private partnership programmes, extensive training and community-based capacity building, decentralisation of HIV services to primary health facilities with a continuum of care between health facilities and community level services to ensure of the treatment adherence, and increasing case detection rate through social media advocacy and information sharing programmes (MOH, 2015). It was proofed that in the previous NSP 2011-2015, the programmes that show effectiveness are NSEP and the Prevention of Mother to Child Transmission (PMTCT). Implementation of any activity involves utilisation of resources including human resources. However, it was not discussed clearly in the NSPEA 2016-2030. Having a strong public-private partnership and extension of programmes under NGOs that target key population and decentralisation of HIV/AIDS management to primary health care will help to mitigate shortage of human resources.

Timeliness is another important aspect to be considered so that the activities are carried out as planned (Chatora, R. & Tumusiime, P., 2004). While drawing up the plan of action, activities are planned to be implemented at given times and within a given period of time. This NSPEA 2016-2030, the implementation review will be conducted every 2 to 3 years until the final evaluation in 2030.

3.7 Monitoring & Evaluation

The purpose of monitoring and evaluation (M&E) is to produce reliable and timely health information and use it to evaluate policy, set priorities, plan, and monitor the effectiveness and impacts of interventions (Management Science for Health, 2010; UNAIDS, 2000). Monitoring and evaluation of NSPEA 2016-2030 are done through the national HIV and AIDS Monitoring, Evaluation and Research Framework (M&E Framework) that has been developed and coordinated by the National AIDS Programme Secretariat, HIV/STI sector of the MOH. The National M&E Framework is government-based and government-led. The system is top-down and the government has the overall responsibility for the national response to the HIV/AIDS epidemic, and is able to measure progress made, to ensure accountability and identify the most effective approaches. The M&E framework is based on multi-sectorial approach, where input is obtained from all government sectors, as well as civil society organisations. This is to ensure that the country can have report on the set goals and targets. The current NSPEA 2016-2030 is comprehensive and was developed based on lessons learnt from the implementation of the previous NSP through consensus-based consultation with key stakeholders in the field, including government, international organisations and non-governmental organisations. The monitoring process is continuous and requires frequent meetings with relevant key stakeholders. Evaluation of the programme through mid-term reviews will be done 2-3 yearly and impact evaluation will be done every 5 years. The final evaluation will be done in 2030.

4.0 Discussions and Recommendations

Based on NSPEA 2016-2030 analysis, the mixed scanning approach is more often used to develop the health plan. It was planned in a very systematic way and based on negotiations from the previous programmes. From the findings stated, Malaysia's Health Planning Framework is comprised of seven (7) steps as illustrated in Figure 1.

In situational analysis, human resources in the health sector should be analysed when planning for all health programmes. Qualified, accessible and responsive human resource in health makes a difference in the outcome of population's health (Bhutta, Lassi, & Mansoor, 2010). It was reported that the maternal mortality in Nepal was remarkably reduced after interventions, such as trainings given to its health care providers, and similarly from a study in Rwanda (Bhutta, et. al., 2010). This shows that it is important to identify the human resources strengths and capabilities in health sectors in order to achieve the objectives of certain programmes.

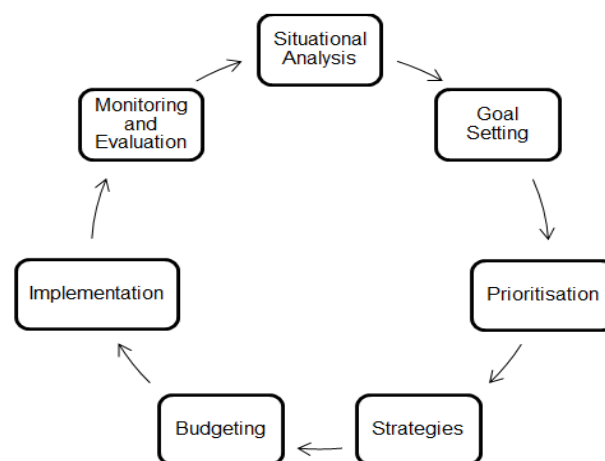


Figure 1: Malaysia's Health Planning Framework

Another aspect that can be considered into setting goals in the national strategic planning is by tailoring the goals according to the local situation. Therefore, the goals could be further refined into focusing more on the local issues which should be based on the country's current situation (Ardal, 2006). For example, Kenya adapted the goal proposed by the Joint United Nation Team on HIV/ AIDS in 2011, which is reducing new HIV infections to zero by 2030 but one of the targets was based on the geographical prioritisation which grouped its counties into three clusters (high, medium and low), as a result of health facility inaccessibility due to geographical disparities in HIV incidences and a disproportionate disease burden across these counties (Ministry of Health Kenya, 2014).

The national strategy plans of ending AIDS look ambitious but it is achievable through a proper health planning process in relations to public health principles. This strategy is similar

with Thailand's national strategy on HIV/AIDS 2012-2016 titled 'AIDS Zero' which focuses on promoting strategies to prevent new HIV infections especially among the key populations, that are to better localise responses and ownership at the sub-national level, to address the stigma and discrimination and the socio-environmental factors which hinder access to HIV prevention and care services (WHO, 2012). Frieden, et. al. (2005) recommended that health care providers, clinical systems, and public health and community organisations can identify people with newly and previously diagnosed HIV infection, and to provide continuous care and initiate ART as soon as possible with the goal of suppressing their viral load.

The problem of the high prevalence rate of HIV in Malaysia needs to be tackled from stages of childhood and adolescence, following challenges of effective sex education and prevention of HIV transmission as highlighted by UNICEF (2005). Therefore, implementation requires multi-sectoral collaboration between various stakeholders to work together in disseminating knowledge on consequences of drug addiction and unsafe sex and consequences of HIV/AIDS. As evidenced by the author Kirby (2002), programmes emphasising on abstinence from sex and the usage of barrier contraception are effective ways to protect against HIV. The study has shown that sex and HIV/AIDS education syllabus in schools and higher learning institutions involving parents and caretakers and the expansion of teaching programmes to homeless shelters and detention centres contributes to prevention of high risk behaviour and awareness of HIV transmission. It was further evidenced that in Malaysia, sex education is taught in school, albeit the subject matter being taught with lacking in clarity with insufficient teaching methods and reluctance from teachers to be straightforward in their teaching (Johari, Maharam, Maznah, & Zulkifli, 2012).

The success of the National M&E Framework depends on the government leadership and the sustained partnerships among the government agencies and NGOs, as evidenced in the success of public-private partnership on an integrated harm reduction into the National Strategic Plan on drugs and HIV/AIDS (WHO, 2011). Although the NSPEA was top-down and formulated by MOH, there is no guideline for a proper monitoring system in place. The roles of NGOs were not clearly defined, which resulted in the expectations of NGOs to take on more than they are able to do so, with or without state financial support (Phua, et. al., 2014). Furthermore, the NSPEA 2016-2030 planning approach can be analysed by its SWOT Analysis. They are further elucidated in table 1.

Table 1: SWOT Analysis of NSPEA 2016-2030.

Strengths	Weaknesses
<ul style="list-style-type: none"> Major alternatives are shortlisted and evaluated. Targets developed from major alternatives are more focused and comprehensive. (e.g HIV epidemic is based on the local context in Malaysia, and it accommodates the current situation) Planning is based on budgeting and the allocation of budget into programmes and received external funding from Global Fund. 	<ul style="list-style-type: none"> Tendency to miss other issues that are not prioritised. (As only selected options are reviewed in details, other important issues that may affect the planning may be missed) Lack of stewardship on the programmes implementation

Opportunities	Threats
<ul style="list-style-type: none"> • Ability to identify all alternatives. (as all alternatives regarding HIV are reviewed initially) • Involvement of multi-sectorial organisation and among public and private sectors • Room for improvement in HIV/AIDS data surveillance 	<ul style="list-style-type: none"> • Conflict of interests among other stakeholders e.g. religious bodies may have a different opinion in NSEP and the authority, such as the polices • Traditional healers may impose threat to the treatment strategy • Policy from small organisations such as NGOs might be overlooked when focusing on main strategies

5.0 Conclusion

This paper describes health planning process and practices in Malaysia based on Malaysia's Health Planning Framework in accordance to the NSPEA 2016-2030. Health planning is essential in strengthening the national healthcare system. By identifying community health problems, the needs and resources required, the administrative action can be layout to reach those priority goals. From this case study, it can be identified that the health planning process and practices in NSPEA comprises of seven (7) steps; situational analysis, goal setting, prioritisation, strategy, budgeting, implementation, monitoring and evaluation. It can be concluded that health planning in Malaysia mostly adopted the mixed-scanning planning approach. There are also still some areas which can be benefited by adopting the mixed scanning approach.

Declaration

Author(s) declare that there is no conflict of interest regarding publication of this article.

References

- Ardal S., Butler J., Edward R., &Lawne R. (2006). The Planning Process- The Planner's Tool Kit. Health Information Intelligence Project: Ontario (Canada).
- Bhutta, Z. A., Lassi, Z. S., &Mansoor, N. (2010). Systematic review on human resources for health interventions to improve maternal health outcomes: evidence from developing countries. World health organization (WHO).
- Brown, T. & Peerapatanapokin, W. (2004). The Asian Epidemic Model; A process model for exploring HIV policy and programme alternatives in Asia.
- Busse K, Mays N, Walt G. (2005) Making health policy. Milton Keynes, UK: Open University Press

- Chatora, R. & Tumusiime, P. (2004). Planning and implementation of district health services. Module 4. World Health Organization. Regional Office for Africa Brazzaville. Retrieved from http://www.who.int/management/district/planning_budgeting/PlanningImplementationDHSAFROMd4 on the March 2nd, 2016.
- Etzioni, A. (1967). Mixed-scanning: a third approach to decision-making. *Public administration review*, 27(5), 385-392.
- Frieden, T. R., Das-Douglas, M., Kellerman, S. E., & Henning, K. J. (2005). Applying public health principles to the HIV epidemic. *New England Journal of Medicine*, 353(22), 2397-2402.
- HIV/STI Sector, Ministry of Health (2015) Ending AIDS in Malaysia: Myth or Reality. Retrieved from http://www.moh.gov.my/images/gallery/Report/Ending%20AIDS%20in%202020%20%28Final_271115%29_printed%20version.pdf
- Johari, T., Maharam, M., Maznah, I., & Zulkifli, M. (2012). Analysis on sex education in schools across Malaysia. *Procedia - Social and Behavioral Sciences*, 340-348
- Kabene, S. M., Orchard, C., Howard, J. M., Soriano, M. A., & Leduc, R. (2006). The importance of human resources management in health care: a global context. *Human resources for health*, 4(20), 1-17.
- Kirby, D. (2002). HIV Transmission and Prevention in Adolescents. Retrieved from <http://hivinsite.ucsf.edu/InSite> on March 11th, 2016
- Malina, D., Frieden, T. R., Foti, K. E., & Mermin, J. (2015). Applying Public Health Principles to the HIV Epidemic—How Are We Doing? *New England Journal of Medicine*, 373(23), 2281-2287.
- Management Sciences for Health. (2010). *Health Systems in Action: An eHandbook for leaders and managers*. Cambridge.
- Ministry of Health Kenya. (2014). Kenya HIV Prevention Revolution Road Map Count Down to 2030. Retrieved March 3rd, 2016 from <http://www.nacc.or.ke/images/documents/Final.pdf>
- Ministry of Health Malaysia. (2011) Country Health Plan 10th Malaysia Plan 2011-2015. Retrieved from <http://www.moh.gov.my/> on the February 25, 2016.
- Ministry of Health Malaysia. (2015). National Strategic Plan Ending AIDS 2016-2030. Retrieved from <http://www.aidsdatahub.org/> on the February 25, 2016.
- Phua K.L, Ling S.W.H, Phua K.H, (2014). Public-Private Partnerships in Health in Malaysia: Lessons for Policy Implementation. *International Journal of Public Administration*.
- Sullivan, L. E., Metzger, D. S., Fudala, P. J., & Fiellin, D. A. (2005). Decreasing international HIV transmission: the role of expanding access to opioid agonist therapies for injection drug users. *Addiction*, 100(2), 150-158.
- Thailand National AIDS Committee, (2014) Thailand National Operational Plan Accelerating Ending AIDS, 2015-2019. Retrieved from namc.ddc.moph.go.th/namc/document/.../3.../Aids%20Book%20Eng.pdf

- The Global Fund to Fight AIDS, Tuberculosis and Malaria (2015) Results Report 2015. Geneva. Retrieved from www.theglobalfund.org/documents/publications/annual_Reports/Corporate_2015ResultsReport_Report_en/
- UNAIDS. (2000). National AIDS Programmes: A guide to monitoring and evaluation. Switzerland.
- UNICEF. (2005). Effective sex education still a problem in many countries. Retrieved from UNICEF Malaysia: http://www.unicef.org/malaysia/aids_4947.html
- World Health Organization, (2011) Good Practices in Asia: Effective paradigm shifts towards an improved national response to drugs and HIV/AIDS: Scale-up of harm reduction in Malaysia. Kuala Lumpur, Malaysia: World Health Organization.
- Wilkinson D. Condom effectiveness in reducing heterosexual HIV transmission: The WHO Reproductive Health Library; Geneva: World Health Organization.
- World Health Organization, (2016) National health policies, strategies and plans retrieved from www.who.int/nationalpolicies/processes/priorities/en/
- World Health Organization, (2012). Thailand Launches its 2012-2016 National AIDS Strategy.