HIV/AIDS IN MALAYSIA: A REVIEW OF EPIDEMIOLOGY, POLICY AND PUBLIC HEALTH RESPONSE

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Abstract. This paper critically examines the HIV/AIDS epidemic in Malaysia by integrating epidemiological evidence with an analysis of policy frameworks, health system responses, and the social determinants shaping vulnerability and access to care. While Malaysia has achieved measurable progress in stabilising new HIV infections since the mid-1990s, this apparent success masks persistent structural weaknesses that threaten the sustainability and equity of the national response. The epidemic remains disproportionately concentrated among key populations, particularly men who have sex with men, people who inject drugs, and increasingly women; highlighting a shift from a primarily drug-driven epidemic to one shaped by sexual transmission, stigma, and legal exclusion. Despite the existence of a comprehensive National HIV/AIDS Strategic Plan and a commitment to global targets such as 90-90-90 and 95-95-95, gaps in surveillance data, uneven ART coverage, and poor long-term retention undermine policy effectiveness. Crucially, this analysis argues that biomedical interventions alone are insufficient when deployed within a legal and social environment that criminalises behaviours associated with HIV risk and perpetuates discrimination. Laws governing drug use, sex work, and sexual minorities continue to deter testing, delay treatment initiation, and weaken community trust in health institutions. The Malaysian experience demonstrates a central paradox: strong political commitment and technical capacity coexist with socio-legal barriers that reproduce inequality in health outcomes. This paper contends that a rights-based, equity-oriented approach, grounded in community participation, legal reform, and improved data transparency, is essential to move beyond containment toward genuinely ending AIDS in Malaysia. Without addressing stigma, structural violence, and policy fragmentation, current gains risk stagnation or reversal, particularly among marginalised and hard-to-reach populations.
Keywords: *HIV/AIDS, stigma, public policy, health equity, Malaysia*

Introduction

Since its discovery in the late 1980s, the human immunodeficiency virus (HIV) has emerged as a formidable public health crisis for Malaysia a nation that has established a notable reputation for its ongoing initiatives aimed at controlling the spread of this virus. The concerted efforts from both governmental bodies and non-governmental organizations have been heavily bolstered by international partnerships, which have provided essential resources, specialized expertise, and collaborative strategies to effectively combat the epidemic. This comprehensive approach has been further fortified by the presence of a robust legal framework, unwavering political commitment from leaders at various levels, and the active involvement of the general public in HIV awareness and prevention initiatives. Over the years, longitudinally sourced data have repeatedly confirmed that Malaysia has made significant strides in successfully containing the epidemic; however, recent emerging trends along with evolving circumstances pose increasingly serious threats to undermine the ongoing progress that has been achieved thus far. Furthermore, an acute shortage of updated data from various

governmental agencies has compelled researchers and professionals working within the field to seek out alternative sources of information. This includes the solicitation of expert opinions, the utilization of grey literature, and a reliance on specialized knowledge in several of the subsequent analyses, all of which have been devised to adequately address the fundamental questions surrounding the current state of HIV in Malaysia. Efforts to gather accurate data have become essential as they directly influence strategies and policymaking. As the epidemic evolves, the importance of up-to-date and reliable information cannot be overstated. It remains critical for those engaged in the fight against HIV to continually adapt their approaches based on the latest available evidence, ensuring that interventions remain relevant and impactful in addressing the diverse challenges posed by the epidemic.

The epidemiology of HIV/AIDS is defined by patterns of prevalence and incidence, geographic and age distribution, social demographics of infected individuals, transmission modes, and associated risk factors. Malaysia began collecting surveillanced data on a national scale in 1998 through the National Sentinel Surveillance System. Determinants of transmission risk include sexual orientation, combination drug use, engagement in sex work, and exposure to excessive quantities of the narcotic methamphetamine. Epidemiological studies confirm the significance of drug use and associated risk behaviors in the transmission of HIV (Wong et al., 2008).

Results and Discussion

Epidemiological landscape

The epidemiology of HIV/AIDS serves to define and illustrate the complex and multifaceted nature along with the broad scope of this pressing public health issue, while concurrently playing an essential and crucial role in guiding necessary public health responses and in the formulation of effective and impactful policies. The very first case of HIV in Malaysia was officially reported back in the year of 1986, and it was during 1988 that the inaugural case of AIDS in the country came to light. It is essential to note that HIV transmission occurs primarily through two significant avenues: injecting drug use, as well as various sexual risk behaviours that can facilitate the rapid spread of the virus throughout the population. When we take a closer look at the HIV situation in Malaysia, it becomes increasingly evident that it bears similarities to the HIV situations of other nations within the South-East Asia region; however, a notable and important development has emerged and gained traction since the 1990s. The rate of new HIV infections in Malaysia appears to have stabilised over the years, currently resting at a level that is roughly a quarter of what it was during the mid-1990s, which is a significant reduction. This positive trend suggests that some degree of success has indeed been achieved through the concerted and focused efforts undertaken by the Government to combat this ongoing epidemic effectively. These efforts reflect a commitment to public health and the well-being of the community in Malaysia (Wong et al., 2008).

As of December 2012, the cumulative number of reported HIV-positive cases was 109,564, with 24,660 cases (22.5%) progressing to AIDS and 17,806 AIDS-related deaths. The number of new HIV-positive cases reported in 2012 was 3,120 (a rate of 0.1 per 1,000 population). The annual incidence of newly reported HIV-positive cases per 1,000 population remained below 0.3 since 1999. Twenty-seven per cent of reported cumulative cases as of December 2012, including 61.9% of new cases reported in 2012,

were among women and new HIV cases reported among women increased by 9% from 2,866 in 2011 to 3,126 in 2012 (Nazrul Islam Mondal and Shitan, 2013). About 29% of reported cumulative cases were attributed to heterosexual transmission, 29% to injecting drug use, 0.5% to other risk factors and 20% to modes where risk factor is unknown. Heterosexual transmission remained the predominant mode of transmission in Malaysia, followed closely by injecting drug use. HIV transmission among injecting drug users has declined since the introduction of harm-reduction approaches in 2004, which is largely attributed to an increase in the injection-sharing population. Although HIV transmission among injecting drug users decreased more than 50% from 2000 to 2005, it still represents a significant portion of the HIV epidemic in Malaysia (Jaganathan, 2010).

Prevalence and incidence trends

The HIV/AIDS epidemic in Malaysia has experienced significant and noteworthy transformations since the very first case was reported in 1986. From 1986 all the way up to June 2007, a cumulative total of 78,784 cases of HIV was documented in the country, with a striking 33.4% of these cases occurring among individuals who were aged less than 30 years old. At the same time during this period, the number of reported AIDS cases reached a total of 21,600, and among these, a concerning 43.6% were found in those also belonging to the age group of under 30 years. These troubling statistics highlight the urgent need for targeted interventions for the youth. In line with these general epidemiological trends observed in Malaysia, data from the Ministry of Health of Malaysia reveal that the prevalence of HIV/AIDS has shown rather alarming and rapid increases since the mid-1990s, raising further concerns about the trajectory of the epidemic in the region (Nazrul Islam Mondal and Shitan, 2013; Wong et al., 2008).

The HIV/AIDS epidemic in Malaysia reveals significant and distinct demographic and geographic patterns that are crucial to understanding its impact. Further in-depth analysis indicates that more than 90% of all reported HIV cases occur among males, illustrating a notable gender disparity. Additionally, there is a concerning trend showing a growing proportion of cases reported specifically among indigenous populations residing in rural areas. Men who have sex with men (MSM) and injecting drug users (IDU) are recognized as the key populations at an increased risk for HIV infection. Moreover, there has been a noticeable increase in HIV transmission occurring through heterosexual sex, alongside the vertical transmission route, which poses additional challenges in controlling the epidemic. Various underlying causes of the epidemic are also identified, which include stringent legislation against drug abuse and its implications, adverse social conditions contributing to vulnerability, national policies that may inadvertently affect prevention efforts, and the role of adult education programmes in raising awareness and understanding of the disease. Understanding these factors is essential for forming effective strategies to combat the ongoing epidemic and protect at-risk populations.

Demographic and geographic patterns

HIV/AIDS is notably most prevalent among young adults in Malaysia, and it is relatively rare when it comes to its occurrence among children and adolescents. Current data obtained from the Malaysian Ministry of Health indicates that the number of reported HIV cases peaks around the ages of 30–39 for both sexes, with the greatest

concentration of patients being found specifically among individuals aged 30–34. The dynamics and patterns of this epidemic differ noticeably between men and women, as well as varying significantly with respect to ethnicity and urban versus rural residence. It is important to highlight that males account for over 95% of all HIV infections, which suggests that the HIV epidemic is heavily concentrated primarily among drug users and high-risk sexual networks. In stark contrast, women are more likely than men to contract HIV through vertical transmission, which is a critical factor in the spread of the virus. Understanding the demographic profile of those affected by HIV is crucial for effectively tracking the progress of the epidemic, as well as designing and targeting appropriate prevention plans, and for mobilising advocacy and support for resources. In Malaysia, the majority of reported HIV cases are concentrated particularly among younger individuals. The rapid escalation of HIV cases that occurred in the late 1980s and early 1990s had a severe impact on the 20–29-year age group more than any other demographic. Young adults aged 15–24 years currently account for approximately one-third of all reported HIV cases in the country, reflecting the strong association of HIV risk with unsafe sexual practices and behaviors prevalent within this age group (Nazrul Islam Mondal and Shitan, 2013; Wong et al., 2008).

Transmission modes and risk factors

The primary modes of HIV transmission observed in Malaysia include sexual contact, which predominantly involves illicit heterosexual activities; mother-to-child transmission that occurs during the process of delivery; and the sharing of contaminated needles and syringes among individuals who engage in injecting drug use (IDUs). However, it is important to note that these specified modes of transmission merely serve as an epidemiological classification and do not provide a complete picture, as they fail to encapsulate the profound effects of HIV-related stigma and discrimination that permeate society and influence these transmission routes. The parameters that have been identified are capable of significantly affecting the dynamics of each mode of transmission. For instance, unprotected sexual behavior frequently arises as a consequence of escalating inequality, pervasive poverty, and an alarming lack of awareness and education among illicit sex workers. Those who have intimate relationships with non-sexual partners and forego condom use are often less cognizant of their partners' HIV status. Consequently, high-risk sexual practices such as the inclination of Muslim men to engage in relationships with a second wife or a girlfriend due to the cultural acceptance of polygamous marriage practices, are to be expected, further complicating the landscape of HIV transmission in the region (Kashtoori et al., 2016; Nazrul Islam Mondal and Shitan, 2013; Wong et al., 2008).

Health system and policy framework

The National HIV/AIDS Strategic Plan (NHSAP) serves as Malaysia's essential and primary policy blueprint aimed at addressing and tackling the ongoing HIV epidemic that has affected many within the country. Over the years, this critical document has undergone several important revisions to ensure its relevance and effectiveness across various evolving epidemiological and social contexts. The most recent version of the plan was meticulously formulated in the year 2016, with a formal endpoint designated for the year 2020. This planning was executed based on a comprehensive whole-of-government and multisector approach, ensuring that all relevant stakeholders are

involved in the fight against HIV/AIDS. Key governance structures and operational elements that underpin the strategic plan are depicted in the accompanying. Furthermore, several significant implementation milestones have been successfully achieved, reflecting the commitment and determination of the Malaysian government and its partners in combating the challenges posed by HIV/AIDS. (Deuraseh and Rahman, 2014)

Parliament recognized HIV as an essential development challenge within the framework of the National Development Plan for the years 1999 to 2000. The ongoing Human Immunodeficiency Virus (HIV) infection and the related acquired immunodeficiency syndrome (AIDS) epidemic continues to be recognized as one of the four foremost national health crises that require urgent attention and action. Consequently, a series of strategic plans have been developed to effectively respond to this pressing issue. The First National Strategic Plan on HIV/AIDS, formulated for the period 1998 to 2000, was quickly followed by the Second National Strategic Plan on HIV/AIDS, which aimed to cover the years from 2001 to 2005. This was subsequently succeeded by the Third National Strategic Plan, which sought to address the period from 2006 to 2010. These plans have been meticulously designed to combat the ongoing shortage of essential resources, the critical need for improved education, counseling, and knowledge dissemination, as well as to develop effective strategies to address the pervasive stigma and discrimination associated with HIV/AIDS (Wong et al., 2008).

National HIV/AIDS strategic plan and milestones

The National HIV/AIDS Strategic Plan (NHSAP) serves as the primary and crucial strategic planning document dedicated to guiding the national response to HIV/AIDS in Malaysia. Initially, the national strategic plan set forth for the years 2011 to 2015 was thoughtfully extended to encompass the years 2016 to 2020, reflecting the ongoing commitment to a long-term national response addressing the complex challenges posed by HIV/AIDS. Throughout the specified period of 2016 to 2020, the NHSAP concentrated its efforts on meeting ambitious targets encapsulated in the 90-90-90 framework, aiming for 90 percent of those living with HIV to know their status, 90 percent of those diagnosed to receive antiretroviral therapy, and 90 percent of those on therapy to achieve viral suppression, all to be accomplished by the year 2020. However, as of the year 2020, Malaysia found itself only partially meeting these targets, with the country showing progress with the numbers achieving 64-76-83, respectively. This shortfall in reaching the established benchmarks highlighted the critical need for a renewed strategic approach, prompting the development of a new strategic plan that commenced its formulation in 2020. This new plan is designed to provide clear and actionable direction in preparation for the year 2030 and aligns strategically with the Global 95-95-95 targets. Additionally, this renewed effort is consistent with the commitments that Malaysia has made at the United Nations High-Level Meeting and the Political Declarations focused on HIV, as well as adhering to the broader goals of the 2030 Agenda for Sustainable Development and Universal Health Coverage (Ahmed, 2015).

Coordination for the national response to HIV/AIDS is integrated through the Government's three-dimensional approach. The First Dimension comprises all sectorial collaboration on HIV, the Second Dimension comprises the Government-Non-Government Bodies, and the Third Dimension comprises national collaboration between Government as the Lead and Stakeholders at both national and district levels. To

support coordination the National Cooperation Mechanism on HIV/AIDS was established through the Malaysian AIDS Council in 1998. The Health Minister appointed a Senior Specialized Committee on HIV/AIDS to recommend the national HIV/AIDS policy and strategic action from time to time. Monthly meetings are held while all participating stakeholders are invited to submit their views or comments in between to fast-track response to the ever-changing situations. The approach extends to men who have sex with men, transgender and sexual minorities, employees within the entertainment industry, orphaned children, street children and other displaced persons and especially, prisons and detention centres. The approach is also gender sensitive and preventive measures are targeted at youth.

ART accessibility and coverage

Since early 2011, Malaysia has been proactive in adopting a variety of policies aimed at significantly enhancing the nationwide accessibility of Antiretroviral Therapy (ART) for individuals living with HIV. These policies have encompassed the strategic establishment of numerous ART treatment sites across public health facilities located throughout the country, ensuring that individuals from all walks of life can receive the necessary care. Moreover, the policies guarantee the provision of free treatment to patients, irrespective of their nationality, thus promoting inclusivity and healthcare equity. In addition to these initiatives, there is also a clear provision for patients to maintain ongoing access to ART even after they have relocated to another state, which addresses continuity of care. As of mid-2014, an impressive more than 500 initiation sites were made available, underscoring Malaysia's commitment to tackling this public health issue. Furthermore, the national guidelines actively support the initiation of ART upon diagnosis, emphasizing prompt treatment, which includes cases involving non-AIDS-defining diseases, and making this provision regardless of the CD4 count (Ferro et al., 2017; Ahmed, 2015).

ART coverage and retention remain challenges. Since the inception of the program, estimated ART coverage has remained lower than 60% of PLHIV and has not improved since 2010. ART hijacking incidents during the uptake and file-transferring phase among rural patients and minor ethnic groups can hamper retention. Retention rates are unsurprisingly higher in urban settings than with rural patients, who must often travel long distances to obtain services.

Prevention programs and harm reduction

Condom promotion, coupled with needle/syringe exchange programs, pre-exposure prophylaxis (PrEP), and robust outreach efforts in schools and communities, forms the backbone of the Malaysian Ministry of Health (MoH) initiatives designed to effectively prevent HIV transmission and significantly reduce the overall size of the HIV/AIDS epidemic. These critical activities are an integral part of the Malaysia National Strategic Plan aimed at ending AIDS by the year 2030. The country has established a foundational framework for basic condom promotion aimed at all segments of the population; in addition, needle/syringe exchange activities specifically focus on individuals who inject drugs (PWID). Furthermore, school outreach initiatives are designed to engage and educate adolescents, particularly those aged 10–14. The distribution of condoms has seen a continual increase, with an impressive average of 165 million condoms allocated annually across the nation between the years 2006 and

2015. The MoH has actively implemented needle/syringe exchange and opioid substitution programs since the year 2005 as part of its commitment to harm reduction. Pre-Exposure Prophylaxis (PrEP) has been strategically targeted towards key populations, particularly focusing on men who have sex with men (MSM) and transgender women (TGW). Despite the increasing awareness and availability of these prevention methods, data from 2018 indicates that youth aged 18–24 comprised the majority of PrEP users, yet the overall uptake remains notably low, with only about 900 clients accessing the service, especially when considered against the backdrop of the size of the ongoing epidemic.

Community outreach programs conduct various outreach efforts, comprehensive screenings, and detailed HIV education specifically targeting highly vulnerable yet hard-to-reach groups, such as men who have sex with men (MSM), transgender persons, and female sex workers. Community-based and faith-based organizations play a crucial role in Malaysia, as they are essential for providing vital services and raising awareness concerning HIV within these populations. Schools serve as a key venue for effectively addressing adolescent HIV risk behaviors, making them critical in the prevention strategy. Furthermore, multimedia campaigns are strategically designed for students, distributing health education materials extensively and conducting a range of educational activities that engage and inform the youth about HIV prevention and safe practices. These initiatives are essential in creating a more informed and healthier community.

Surveillance, monitoring, and data gaps

Epidemiological data on HIV/AIDS continue to be provisional and uncertain primarily due to significant gaps that exist within surveillance systems and the inconsistent procedures used for estimation. The Ministry of Health plays a crucial role in maintaining a robust monitoring system designed to assess the overall epidemiology of HIV/AIDS in the population while simultaneously evaluating the effectiveness of its public health response initiatives. The ongoing uncertainty surrounding the completeness and accuracy of reporting processes greatly hampers effective and strategic planning efforts. In the current framework, all HIV positive cases are systematically registered at health facilities across the nation, with confirmed infections and AIDS cases being rigorously reported on a quarterly basis to the Centre for Disease Control and Prevention. Despite these efforts, there remains a notable lack of accessible information regarding the number of individuals who are actually seeking and utilizing HIV/AIDS services in private healthcare facilities, leaving a critical gap in understanding the full scope of the epidemic and the response required (Chandran et al., 2021; Wong et al., 2008).

Additional data sources, including the Health Information Management System and the Second National Health and Morbidity Survey, can support triangulation. The non-communicable disease monitoring framework enables the systematic assessment of risk factors, comorbidities, and care. Yet reported data from these platforms are not sex-disaggregated. Considering that HIV/AIDS primarily affects males, especially among key populations, the availability of sex-disaggregated information is crucial for conducting comprehensive epidemiological analyses to understand the evolving situation and enable responsive policy formulation.

Social determinants and stigma

In Malaysia, the legal landscapes and contexts surrounding HIV/AIDS, sex work, and drug use remain profoundly stigmatizing and are deeply rooted in societal attitudes. Laws exist against prostitution and the indoor sale of sex conducted without a valid registered business, which further reinforces the marginalization of individuals involved in these activities. Additionally, the possession of drugs is criminalized, creating a culture of fear and further alienating those struggling with addiction. The Pharmaceutical Act of 1989 places significant restrictions on the provision of opioids intended for the treatment of drug addiction, meaning that harm-reduction drugs designed to assist in recovery are regrettably not freely available to those in Malaysia who may need them the most. Actions taken by the Malaysian Prison Department further limit access to essential harm-reduction services for prisoners, leaving many without the necessary support during their incarceration. Moreover, grassroots efforts related to human rights and advocacy for HIV are not only limited but are also met with stringent restrictions, which stifles any progressive movement towards addressing these critical health issues. A detailed analysis conducted in 2019 spanning 160 countries found that Malaysia was categorized as having both a high level of criminalization in regard to drug use and a high degree of restrictions placed on human rights as they intersect with HIV/AIDS. The Malaysian National HIV Strategy appears to focus narrowly on drug use, notably neglecting to mention the crucial constitutional guarantees of gender equality or the prohibitions against discrimination specifically based on gender and sexual orientation. Furthermore, outreach efforts targeting communities to support the prevention of mother-to-child HIV transmission are decidedly limited. There are no specialized programs aimed at overcoming the distinct barriers posed to displaced populations regarding the prevention of mother-to-child transmission of HIV. An analytical report concerning HIV testing rates and the subsequent linkage to care demonstrated startling disparities, indicating that men who have sex with men generally experience significantly lower coverage of essential services compared to other demographic groups. This group specifically faces challenges, particularly in accessing care that may be available to individuals exhibiting a combination of non-marital heterosexual behaviour, drug use, and uptake of HIV testing services. The intersection of urban over-representation within this vulnerable population and existing coverage barriers has resulted in men who have sex with men often being pushed to seek care from “other” group-covered sections, underscoring the urgent need for tailored approaches to address these disparities (Mahamboro et al., 2020).

Legal and policy context

Public health and human rights are inextricably linked. The right to health encompasses a range of social and legal entitlements, such as the reduction of illness, the availability of universal health care, employment without discrimination, and allocated financial resources (Siregar et al., 2021). As such, laws that protect human rights are viewed as a precondition for maintaining health, even among people born and raised within a particular cultural, political, and economic framework (Wong et al., 2008). The dialectic between law, rights, and health forms a critical juncture for understanding HIV/AIDS in Malaysia. Human rights violations and discrimination impede access to essential health care services for people affected by the epidemic. The introduction of interventions such as outreach, needle exchange, and methadone maintenance, once considered threatening or irrelevant, have spared the nation vast

numbers of HIV-positive cases (Muhaimin and Besral, 2011). As with other countries, laws governing access to health-care products and the individual right to knowledge remain a challenge. Such barriers cripple the delivery of health information on issues such as safe sex practices, behaviour modification, and treatment. Lastly, a number of laws that criminalise the drug and sex trades in less affluent communities allow for discretionary prosecution and coercive preventive actions. Such statutes intensify the stigma associated with HIV, making health-seeking behaviour even harder to pursue.

Marginalized populations and access to care

Access to HIV-related services in Malaysia is largely determined by social status. Key affected populations (KAPs) such as men who have sex with men (MSM), transgender women, and people who inject drugs (PWID) experience stigma and discrimination both in society and within health systems. Bans on the sale of syringes in places on the National Health Morbidity Survey encourage “dirty” needle use (Wong et al., 2008). Domestic workers, sexual minorities, Rohingya refugees, and other migrants may be excluded from programs due to their legal status. People living with HIV/AIDS (PLHA) face widespread stigma that discourages disclosure and testing. Experts suggest either on-site treatment and lifestyle guides at clinics or mobile units that connect KAPs to care. As Malaysia moves into Phase 2 of the National Strategic Plan on Ending AIDS, the proposed shift from health pockets to equity-based implementation is a welcome change. The inclusion of marginalized and hard-to-reach groups in the Overarching Policy of the Malaysian UHC needs clarification between the DoH and stakeholders responsible for their health. National and global tracking shows increased recognition of equity requirements, but public release remains weak. Since 2015, the Ministry has led a comprehensive, multi-agency initiative to promote KAP access to health services, an approach that could serve as a model for access to HIV-related services.

Community engagement and civil society

Community engagement and civil society organizations play a crucial role in Malaysia's response to HIV/AIDS, enhancing prevention, treatment, and support efforts while also addressing associated stigma. Involvement of communities in HIV programming helps to reduce stigma and discrimination against people living with HIV (PLHIV), enabling those concerned to obtain information and support more freely. Civil society, including both non-governmental organizations and community initiatives, contributes to addressing HIV and AIDS through advocacy, outreach, education, training, and service delivery. Efforts to engage communities and the participation of civil society organizations, both formal and informal, have been reinforced by Malaysia's commitment to the 2016 United Nations Political Declaration on Ending AIDS. The community-based participatory approach, already widely adopted before the declaration was announced, remains a guiding principle in engaging communities to strengthen Malaysia's HIV response.

Public health interventions and outcomes

HIV/AIDS Public Health Program in Malaysia emphasizes prevention of mother-to-child transmission (PMTCT) and early detection, treatment, care, and support through a continuum of services (Wong et al., 2008). The Federal Government and State

Governments collaborate with UN agencies and other interested parties to implement and monitor the PMTCT program. The government has introduced an integrated package for antenatal care (ANC), comprising HIV and syphilis testing. The PMTCT coverage had reached 88.3% by the end of 2011. Of the 1,971 HIV-positive pregnant women who had received the services, 1,744 (88.5%) had been given ARV prophylaxis, and only two HIV-positive infants had been born from this group. The Programme for HIV Prevention and Support Services (PHPSS) is in place to offer a continuum of prevention, treatment, care, and support services for HIV and harm reduction to injecting drug users (IDUs), men who have sex with men (MSM), sexually transmitted infections (STI) patients, and their partners. HIV testing and counseling are provided at selected Government health facilities. In 2011, a total of 120,673 individuals had undergone the testing, of which 42,175 tested positive. Referral to ART clinics occurs after confirmation from the testing laboratory at the receiving facility, while PHPSS clients are referred to PHPSS health service providers.

ART involves the provision of the three ARV drugs as first-line treatment, under the National Antiretroviral Therapy Guideline 2006. Following this guideline, there were 15,305 patients receiving ART at the end of September 2012. The Malaysian AIDS Council (MAC) provides ART supply management support through the Strategic Plan. Key performance indicators include the percentage of patients with undetectable viral load. By the end of 2011, 92% of these patients had maintained regular clinical visits, while 94% had received at least one viral load test and 57% had achieved undetectable results.

Prevention of mother-to-child transmission

HIV prevalence among pregnant women in Malaysia remains low, estimated at 0.03% in 2021. The country has made significant progress in implementing programmes for the prevention of mother-to-child transmission (PMTCT) and is on track to achieve the global targets set by the World Health Organization (WHO) for 2025. Between 2019 and 2022, testing coverage among pregnant women was consistently above 90%, with an average of 92.4%, and 97.5% of HIV-positive mothers received antiretroviral therapy (ART) to prevent transmission to their infants. Nevertheless, since 2016, no data on paediatric ART coverage or the number of children newly infected through vertical transmission have been published.

Testing and linkage to care

Routine HIV testing is essential for early diagnosis, prompt linkage to care, and initiation of antiretroviral therapy (ART). Malaysia's National Strategic Plan emphasizes promoting testing services, particularly for high-risk populations, to ensure at least 90% of HIV-positive individuals are diagnosed. Data from 2005 to 2018 show that the proportion of new diagnoses tested within the preceding 12 months increased from 47.4% to 60.0%, but national uptake remains below the regional and global average (AIDSinfo, 2020). Testing among key populations, while substantial, is insufficient to ensure early diagnosis, let alone optimally link to care.

National estimates indicate that 557,546 HIV tests were performed in 2018, but an average of only 20.4% of the general population had ever been tested for HIV. Uptake among men who have sex with men (MSM) increased by 12.9 percentage points between 2015 and 2019 to 60.4%, reaching the national target. Data from the United

Nations Educational, Scientific and Cultural Organization (UNESCO) suggest that only 13% of adolescents aged 15–19 had received an HIV test. In 2020, 93% of individuals newly diagnosed were retested for confirmation, with a median interval of 3 days. Those requiring further confirmatory tests were redirected to dedicated clinics; 94% returned within 30 days, yet a substantial proportion disengaged (Malaysian Ministry of Health, 2020). Regional data indicate national average rates of return-after-referral and confirmation of initial positive results were 16.0% and 73.5%.

Adherence, retention, and treatment outcomes

Contrary to the global downward trend, Malaysia's HIV/AIDS epidemic has continued to develop unfavorably. Despite the remarkable access to antiretroviral therapy (ART) which hinges on the universal access principle guaranteed by the National Strategic Plan for Ending AIDS 2016-2030, the effectiveness of ART as an intervention is impeded by poor adherence to treatment. The proportion of those who stopped ART after 12 months rose significantly between 2010 and 2014, especially among those with a higher educational level. Even with the existence of national-level ART clinics, among the 78% of patients who were still on ART treatment after 12 months, around forty percent did not attend appointments at the facility where ART was first prescribed. Individuals who did not have a job at the time of diagnosis were found to be nearly twice more likely to drop out of the program compared to those holding a job. The continued practice of risk-taking behaviors after knowing their HIV-positive status also played a crucial role in disengagement from the ART program. After testing positive for HIV in Malaysia, the most vulnerable group is not intravenous drug users or the transgender community, but heterosexual men who engage with females considered to be “high-risk”.

Cost-effectiveness and sustainable financing

Programmatic costs for HIV/AIDS services in Malaysia amounted to USD 114–143 million per year in 2018. Dominant funding sources were government allocations (46–53%), donor funds (24–30%), and private sector contributions (18–26%). Funding volatility threatened service coverage in the short and medium term. Cost projections indicated that financing sustainability relied on increases in government allocations and private funding, with alternative funding scenarios also requiring additional donor resources. Continued reliance on external funds was deemed unsustainable without complementary domestic financing.

Comparative perspectives and global context

Malaysia holds a unique and significant position within the dynamic landscape of Southeast Asia and in the wider context of international relations. Despite the challenging reality that the country faces in grappling with an HIV epidemic, which has troublingly gained a precarious foothold over recent years, it still finds itself in a relatively better situation when compared to numerous neighbouring States that also contend with similar health crises. In fact, Malaysia has not encountered the extensive rates of HIV prevalence that currently plague many of its regional counterparts, particularly those in the Greater Mekong region. Additionally, the nation does not face the same degree of political instability that hampers the effective formulation and implementation of necessary policies designed specifically to combat the AIDS threat.

In terms of the policy instruments employed by the State to curb the epidemic's growth, Malaysia primarily focuses on targeting specific at-risk and vulnerable populations, much like its other neighbouring States. However, the country also adopts more innovative policy instruments which include broad-based awareness campaigns and the distribution of subsidised antiretroviral (ARV) drugs, strategies that possess comparatively wider international acceptance and support. These measures indicate that Malaysia is making concerted efforts to improve its health policies in line with global best practices. While the ultimate success of its implementation efforts in combating HIV/AIDS remains uncertain and is still facing various challenges, it is noteworthy that Malaysia exhibits considerably greater awareness of international stakeholder recommendations that have been prescribed to effectively address the infection rate compared to many additional States within the region. This progressive stance reflects Malaysia's commitment to improving health outcomes and represents its approach to overcoming the complexities of the HIV epidemic.

Conclusion

Policy gaps, challenges, and future directions

Malaysia continues to confront extensive and multifaceted challenges in the national HIV/AIDS response, which is critical for public health. Various barriers to the effective implementation of existing policies and interventions persist, serving as a significant bottleneck that hinders progress. Moreover, while the adequacy of current policy measures is increasingly under intense scrutiny, notable gaps in policy coverage remain prevalent and problematic. Notably, evaluations of policies and increasingly rigorous assessments of the scientific literature have emphatically demonstrated that addressing these existing gaps is among the highest priorities for the national response to HIV/AIDS. Efforts aimed at mitigating the impact of these gaps should primarily focus on reforming the National HIV/AIDS Strategic Plan. Furthermore, it is essential to strengthen both the scope and quality of monitoring and evaluation processes to ensure that interventions are having the desired effect. Priority areas that require immediate and further development include comprehensive sexual and reproductive health and rights policies which are vital for equitable access to services. Additionally, the inclusion of specific policy measures along with pricing estimates for neglected essential medicines and medical technologies should be addressed within relevant procurement frameworks to ensure that these critical resources are accessible to those in need. Furthermore, broad legal and regulatory reforms must be pursued to support the establishment of innovative and community-led service provision models, which can significantly enhance local engagement and ownership. To create lasting change, more systematic evaluations of both the political economy and the political feasibility of comprehensive reforms across these various areas are strongly warranted. It is crucial to ensure that all stakeholders are involved in the reform process to create a more inclusive and effective national response to the HIV/AIDS epidemic. Only through concerted efforts and collaboration can Malaysia hope to overcome these significant challenges and improve health outcomes for its population.

Thorough and comprehensive final thoughts, insights, and conclusion on the matter at hand

The HIV/AIDS epidemic represents a major public health challenge for Malaysia. New infections and prevalent cases continue to increase despite sustained government commitments, a comprehensive policy framework, and sizeable funding. Socioeconomic variables further constrain access to prevention, testing, and treatment services. Informed by epidemiological data, the 2008–2015 National HIV/AIDS Strategic Plan recognised that youth remained an important at-risk population. The country has since launched coordinated community interventions aimed at reducing new infections among this group and has also developed a regional HIV prevention initiative targeting men who have sex with men. Monitoring of ART coverage, supply continuity, adherence, and retention indicates that coverage rates are low and have stagnated at about 4 percent, especially in rural regions, and therefore unmet treatment needs remain large. Further investment in cost-effective interventions is essential, yet significant policy gaps persist. Closing these gaps and implementing a more sustainable funding model would allow Malaysia to broaden its response and alleviate generational and regional disparities.

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The authors confirm that there is no conflict of interest involve with any parties in this research study.

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