



MDG 6
Combat HIV/AIDS,
Malaria, and
Other Diseases

Malaysia has achieved considerable success in controlling many infectious diseases over time. A shift in disease pattern from a preponderance of communicable to non-communicable diseases tends to occur as a nation progresses from a developing to developed status. This changing disease pattern has occurred in Malaysia. Since 1970, infectious and parasitic diseases, such as tuberculosis (TB) and malaria, have declined sharply and smallpox has been eradicated. Conversely, non-communicable diseases, namely cardiovascular diseases and cancers, have markedly increased in relative proportion, rising from 24 per cent of all medically certified and inspected deaths in 1970 to around 40 per cent in 2000.

Infectious diseases have been controlled through public health measures, such as provision of safe drinking water, child immunization programmes, proper sanitation and waste disposal, improved nutrition and food quality control, as well as improved health services, in particular through a widespread network of community-based primary health care facilities. General health measures have been supported by a range of poverty-reducing programmes. While acknowledging the successes in infectious disease control thus far, there is reason to be ever cautious of the threat of emerging infectious diseases, such as the Nipah viral encephalitis outbreak, as well as the re-emergence of previously well-controlled infectious diseases, such as tuberculosis. Infectious diseases do not recognize national boundaries, as evidenced by the rapid spread in 2003 of the Sudden Acute Respiratory Syndrome (SARS).

To combat HIV/AIDS, malaria, and other diseases, the target set for MDG 6 is to have halted by 2015 and begun to reverse the spread of HIV/AIDS, and to have halted by 2015 and begun to reverse the incidence of malaria and other major diseases, in particular tuberculosis'. These diseases have tremendous potential impact to undermine development, not least because of the rapidity with which they can spread, their multidimensional impact, and the challenges they pose towards prevention and treatment.

This chapter reviews the trends and patterns in these three infectious diseases, together with the policies, strategies, and programmes that have been used to control them. Each section concludes with some pointers to future challenges that will need to be met if MDG 6 is to be achieved in Malaysia.

Trends and patterns in HIV/AIDS

AIDS, or the Acquired Immune Deficiency Syndrome, is an infection caused by the human immunodeficiency virus (HIV). Sometime after the middle of the twentieth century, HIV infection developed into a series of epidemics in a number of countries, mainly in Africa. By 1985, HIV/AIDS had developed into a full-scale pandemic around the world with a significant presence in every continent, and by 2002, some 3 million people had died of AIDS (Box 6.1).

Box 6.1 INCIDENCE/PREVALENCE AND EPIDEMICS/PANDEMICS DEFINED

Incidence is the rate at which new cases occur in a population in a specified period (e.g. a calendar year).

Prevalence is the proportion of a population identified as cases at a particular point in time.

Epidemics occur when an infectious disease spreads progressively through and beyond a local population,

persists over a lengthy period, and reaches people throughout a country or wider region.

Pandemics are deemed to occur when such a disease expands even more widely, often through the occurrence of a series of epidemics across regions and continents eventually reaching worldwide proportions.

Source of data: UNFPA, 2003.

The first case of HIV infection diagnosed in Malaysia was reported late in 1986. By 2003, the reported cumulative number of cases amounted to some 58,000. Of these, slightly more than 6,000 persons, 11 per cent, had died of AIDS (Table 6.1). The numbers presented in Table 6.1 reflect only those who have been reported. About 80 per cent of reported HIV/AIDS cases occur among those aged 20-39, the younger and potentially more productive segment of the nation's population.

Table 6.1 Cumulative Number of Reported HIV and AIDS Cases, Malaysia, 1990–2003

Year	HIV*			AIDS			Deaths		
	Male	Female	% Female	Male	Female	% Female	Male	Female	% Female
1990	978	14	1.4	23	0	0.0	14	0	0.0
1991	2,719	67	2.4	81	2	2.4	24	9	27.3
1992	5,162	136	2.6	151	5	3.2	68	11	13.9
1993	7,603	202	2.6	215	12	5.3	118	16	11.9
1994	10,892	306	2.7	313	19	5.7	192	22	10.3
1995	14,929	467	3.0	531	34	6.0	342	37	9.8
1996	19,335	658	3.3	858	54	5.9	601	49	7.5
1997	23,062	855	3.6	1,396	84	5.7	1,050	73	6.5
1998	27,389	1,152	4.0	2,214	141	6.0	1,705	107	5.9
1999	31,701	1,532	4.6	3,328	227	6.4	2,529	157	5.8
2000	36,327	2,013	5.3	4,399	324	6.9	3,354	214	6.0
2001	41,799	2,479	5.6	5,587	438	7.3	4,254	289	6.4
2002	48,148	3,108	6.1	6,655	563	7.8	5,077	353	6.5
2003	54,231	3,781	6.5	7,594	700	8.4	5,710	420	6.9

Sources of data: Malaysia, Ministry of Health, 2003; Malaysia, Ministry of Health, *Annual Report*, various years.

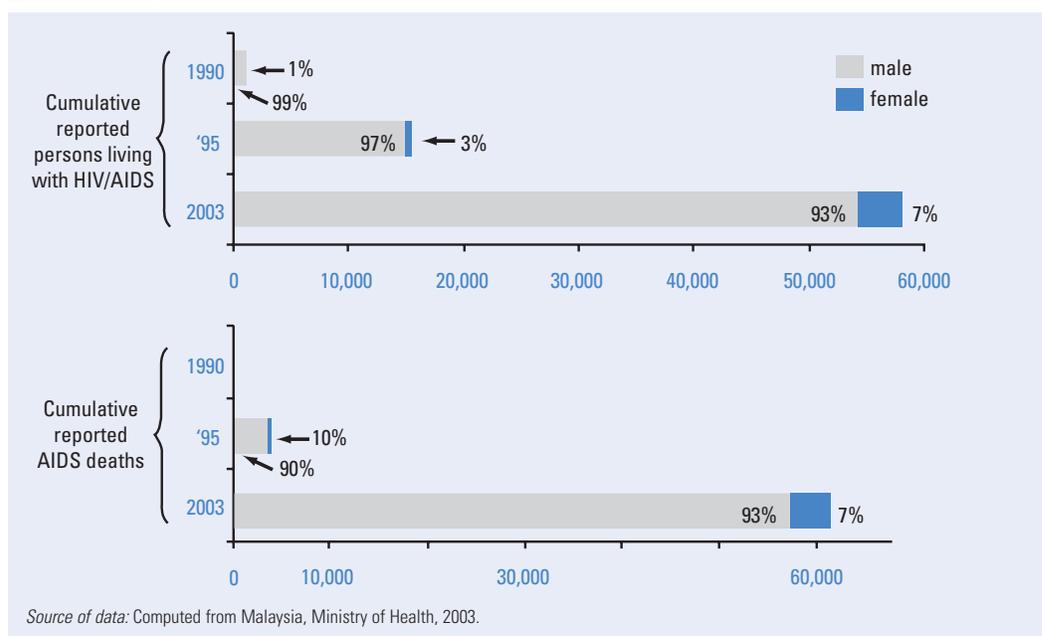
* Inclusive of AIDS cases.

The detection of HIV infection in the country may be affected by the policy on HIV screening which requires testing for eight groups: (i) women receiving antenatal care in government facilities, (private practitioners are encouraged to carry out HIV testing on the

small proportion of antenatal patients using private facilities, but this is not a universal practice); (ii) blood donors; (iii) inmates of drug rehabilitation centres; (iv) high-risk prison inmates (viz., substance abusers, drug dealers, and sex workers); (v) confirmed TB cases; (vi) STD cases; (vii) patients with suspected clinical symptoms, and (viii) traced contacts of HIV infected persons. Routine screening was implemented for selected target groups in 1989 and expanded over a period of time to cover the eight groups above. Moreover, there is an increase in the number of centres providing avenues for voluntary counselling testing.

The rise in number of AIDS deaths has been even more dramatic from 14 in 1990 to 6,130 in 2003 (Table 6.1 and Figure 6.1). Based on the World Health Organization (WHO) classification, the record to date classifies Malaysia as a country experiencing a concentrated epidemic, since HIV prevalence has been less than 1 per cent among the general population, but consistently higher than 5 per cent among injecting drug users (IDUs) over the past 10 years. In Malaysia the HIV/AIDS epidemic is at an early stage and may not have peaked. Low prevalence may be a poor indicator of future prevalence and impact owing to the long wave nature of the disease, in terms of its biological spectrum and, even more so, its social and economic sequelae.

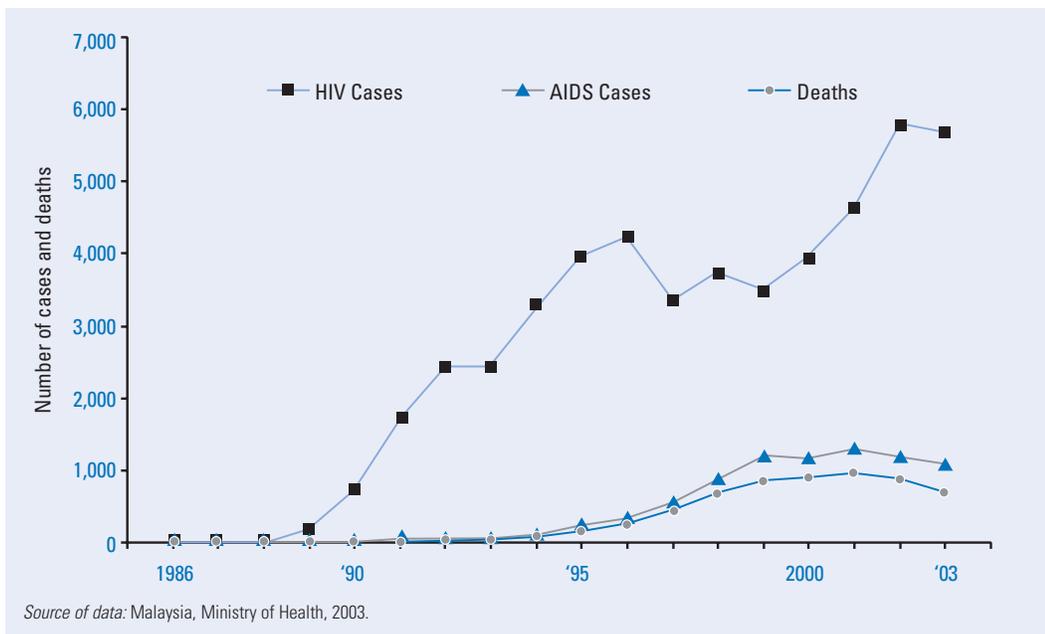
Figure 6.1 HIV/AIDS, Malaysia, 1990, 1995, and 2003



In terms of new reported HIV infections, the number diagnosed per year rose sharply throughout the 1990s, reaching some 7,000 in 2002 (Figure 6.2). The number declined by 3 per cent in 2003 (Figure 6.2). After a lag of approximately five years, the increase in AIDS cases and deaths followed suit from 1995, but the level seems to have stabilized from

about the year 2000. From the trends in reported new HIV and AIDS cases shown in Figure 6.2, it appears that the rate of increase that was very rapid up until 1996 has moderated somewhat in the subsequent period.

Figure 6.2 Reported New HIV Infections, AIDS Cases, and AIDS Deaths, Malaysia, 1986–2002

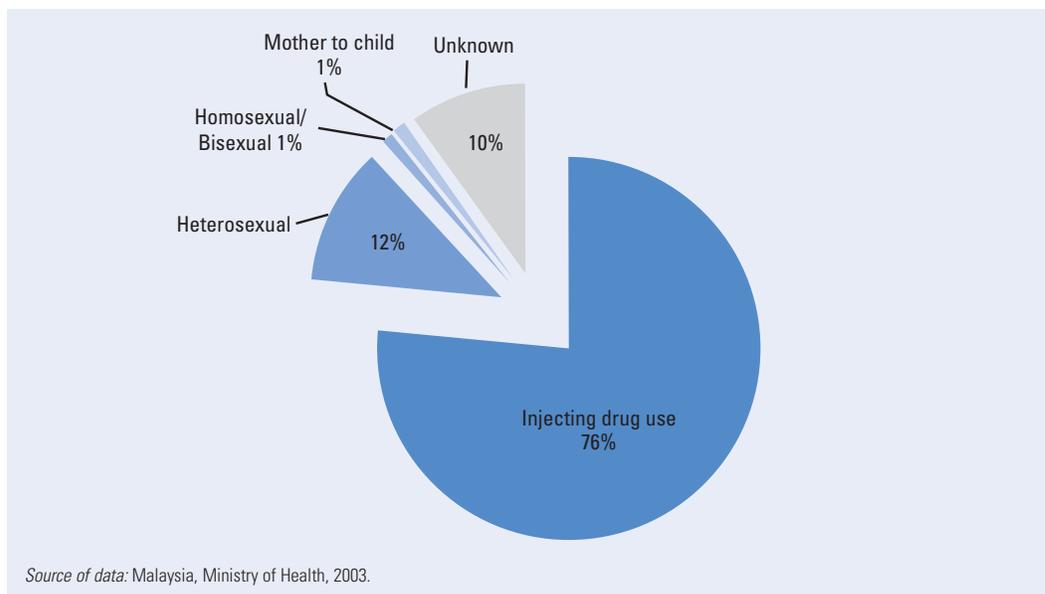


HIV by mode of transmission

WHO classifies Malaysia as having a concentrated epidemic of HIV/AIDS since the problem affects certain population groups and is not yet well established in the general population. Of a total of 58,000 HIV/AIDS cases reported by 2003, some three-quarters comprised IDUs (Figure 6.3). Hence, the likely mode of transmission is through the sharing of needles. Another 12 per cent were categorized under heterosexual activity and just 1 per cent under homosexual/bisexual behaviour. Vertical transmission from mother-to-child and blood transfusions have constituted relatively low-risk categories thus far (Figure 6.3).

While these categories serve as a simplified means of identifying risk groups, it is recognized that they are not mutually exclusive. In particular, IDUs are also likely to be sexually active and engage in high-risk sexual behaviours, such as unprotected sex and sex for drugs. Interestingly, the proportion of reported HIV/AIDS among IDU categories for the recent past has remained stable at around 80 per cent of total cases, while the proportion of detection rate of infection among drug users in rehabilitation centres and prisons has shown a declining trend.

Figure 6.3 Reported Cumulative HIV Cases by Risk Categories, Malaysia, 1986–2002 (%)



HIV cases by sex

In Malaysia, the bulk of infected cases are males who accounted for more than 90 per cent of those living with HIV and AIDS in 2003. As noted, most infections are among IDUs of whom only a small fraction are female. However, the proportion of women with HIV has increased over time, rising from 1.4 per cent in 1990 to 3.4 per cent in 1995, and reaching almost 7 per cent of cumulative cases in 2003 (Figure 6.1). One factor in this rise may be the increased coverage and accessibility to HIV testing for women. The number of women living with AIDS increased from zero in 1990 to 700 in 2003.

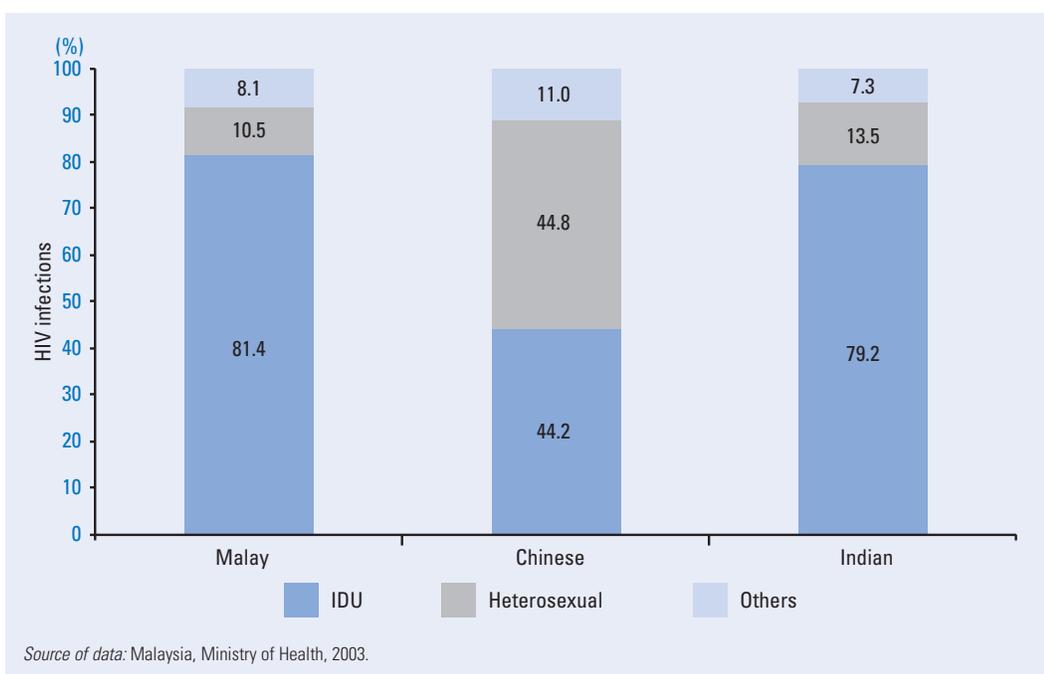
In 2002, 64 per cent of women living with HIV/AIDS were categorized as sexually transmitted and 20 per cent as IDUs. Thus, unlike the case for men, the main risk for Malaysian women is through unprotected sex, either from a regular sex partner, or from multiple partners. Globally, the special vulnerability of women and girls stemming from gender inequalities, socially and economically, is recognized as a major issue in HIV/AIDS prevention. Similar to men, however, women living with HIV/AIDS tend to be young adults. Thus the added burden of HIV/AIDS infection in women is the issue of direct social implications for the family since women are generally the main care providers for both the young and the aged.

HIV by ethnicity

By ethnicity, the cumulative number of reported HIV cases up to 2002 comprised a majority of Malays, primarily young men. This may to some extent reflect a bias because of a focus on the testing of drug users, the majority of whom are Malays, particularly IDUs. Drug dependence is a social problem that has persisted in Malaysia since the 1970s, and even before. Comparing the three major ethnic groups, there is an obvious difference in

the distribution of HIV cases by probable mode of transmission or risk groups. While the majority of Malays and Indians living with HIV are categorized under IDU, a substantially larger proportion of infected Chinese Malaysians fall under the heterosexual risk group (Figure 6.4). Only about 40 per cent of Chinese HIV cases were IDUs, compared with twice as many among Malays and Indians. Thus, the most likely risk behaviours among Chinese Malaysians are unprotected sex with multiple sex partners or a high-risk partner. These ethnic differentials in risk categories reflect underlying differences in the socio-economic conditions driving the infection within each ethnic community.

Figure 6.4 Reported HIV Infections by Ethnicity and Risk Factors, Malaysia, 2002 (%)



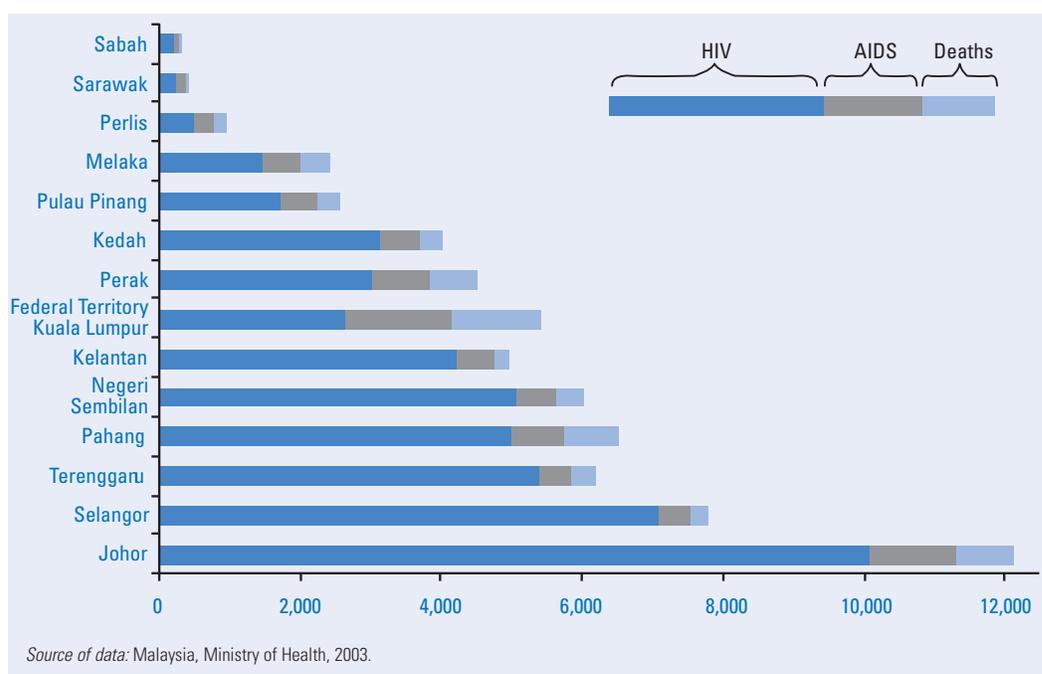
State differentials

The geographic distribution of cumulative HIV/AIDS cases in Malaysia show that the majority, by far, were reported in Johor, followed by Selangor (Figure 6.5). The statistics on HIV/AIDS by state reflect the place where the infection has been diagnosed and not the place of birth of the person or usual residence. In most cases, it is likely that the state of diagnosis will correspond to the state of usual residence. A possible reason for the larger number of reported cases in Johor and Selangor is the high detection rate from their relatively large prisons and drug rehabilitation centres, as compared with other states in Peninsular Malaysia, as well as the relatively greater number of persons coming to hospitals in these two states for treatment. The frequency distribution pattern by state generally follows that of registered substance abusers. The apparently very low levels of HIV/AIDS in Sabah and Sarawak may partly reflect the very low

population of IDUs in these states, as compared with Peninsular Malaysia. Testing facilities in health clinics and hospitals are increasingly available in these two states.

The highest number of AIDS cases and AIDS deaths was reported in Kuala Lumpur. This is due to the availability of medical treatment, referral, and support facilities in this large urban centre. Hardly any AIDS deaths have been reported in Sabah and Sarawak.

Figure 6.5 Cumulative Number of HIV Infections, AIDS Cases, and AIDS Deaths by State, Malaysia, 1986–2003



Children orphaned by HIV/AIDS

By the end of 2001, there were an estimated 5,500 Malaysian children under age 15 orphaned by HIV/AIDS. UNAIDS and WHO global surveillance of HIV/AIDS and sexually transmitted infections estimated that the figure could be as high as 14,000 children who have lost their mother or father or both parents to AIDS. The fate of these children, whether they face discrimination from, or are stigmatized by their circumstances, merits concern. At present, beyond the work of a few NGOs, there are no specific programmes for children orphaned by AIDS.

HIV management and primary care

Since the service was made available in 2000, the number of people who have come or have been referred to health clinics that provide HIV management at primary care level has increased annually. In 2002, 5,800 cases have been managed at 208 health clinics compared to 3,200 cases in 2001, representing an increase of 83 per cent. About 82 per cent of the HIV patients received counselling and supportive therapy, while 15 per cent

were given chemoprophylaxis for opportunistic infection and only 3 per cent received anti-retroviral therapy (ART). The proportion of HIV/AIDS patients under ART is relatively small because most eligible cases are followed up at hospitals. In order to increase coverage of ART in primary health care settings in line with WHO's 3 x 5 initiative, the MOH has increased the number of Family Medicine Specialists.

Enabling environment

Government engagement

The Malaysian government has adopted a multisectoral approach in its efforts to control HIV/AIDS and has increasingly supported measures to respond to the pandemic. This includes involving sectors other than health, such as education, information, and drug agency, as well as NGOs, in the many aspects of AIDS prevention, treatment, care, and support. A Taskforce on AIDS was set up before an AIDS case was first detected in the country in 1986.

In order to provide a more comprehensive response, an Inter-Ministerial Committee chaired by the MOH was established in 1992 to advise the Cabinet on policies, issues and strategic plans. A National Technical Committee was set up to streamline patient care, prevention and control, surveillance, laboratory services, training, and research. In addition, a multisectoral National Coordinating Committee on AIDS (NCCA) chaired by the Secretary-General of MOH was established to facilitate collaborative inter-sectoral actions on HIV/AIDS. The MOH has also facilitated the formation of the Malaysian AIDS Council (MAC) in 1993, an umbrella body of multisectoral NGOs involved in HIV/AIDS activities, in order to coordinate various outreach activities. The NCCA is supported by a state coordinating committee, with AIDS action teams being responsible for the programme at the district level.

AIDS was gazetted as a notifiable disease in 1985. Under the Prevention and Control of Infectious Diseases Act 1988, all forms of HIV infections must be notified to the nearest district health authority. In 1993, a Disease Control Division was created in the Public Health Department of the MOH which included an AIDS/STD (sexually transmitted diseases) section. Consultation and collaboration on HIV/AIDS are also maintained with international organizations such as WHO, United Nations Population Fund (UNFPA), United Nations Children's Fund (UNICEF), United Nations Development Programme (UNDP), and UNAIDS. The government has recognized the NGOs in HIV prevention and has, since 2002, allocated RM4 million annually for 10 years to the Malaysian AIDS Council (MAC), which coordinates NGOs working on AIDS. MAC provides funding, technical support, and resources, and has taken a visible advocacy and leadership role. NGOs, some of which are supported through funding from government and international agencies, such as UNFPA, play a lead role in addressing sensitive aspects of AIDS prevention, which includes encouraging, as may be appropriate, the use of condoms and clean syringes.

National policies

The objectives of the national AIDS programme in Malaysia are consistent with WHO's Global Programme on AIDS, namely: (i) to prevent HIV transmission and to control its spread; (ii) to reduce the morbidity and suffering associated with HIV infection; (iii) to mobilize national resources within the government and non-government sectors to achieve the above objectives; and (iv) to promote international collaboration and cooperation among the nations of the world to prevent and control AIDS.

The MOH works with other ministries in the fight against HIV/AIDS through the National Committee on AIDS and the National Strategic Plan. Inter-agency and intersectoral collaboration is emphasized in recognition of the fact that AIDS is not just a health issue. Relevant ministries are represented in various programmes. For example, the AIDS education programme in schools is a joint collaboration between the MOH and the Ministry of Education. The Ministry of Information supports the MOH in the dissemination of information and health education messages on AIDS through the radio, television, and mobile information units.

Raising public awareness and knowledge on HIV/AIDS has been a focus of the MOH since it formulated its Plan of Action in 1988. In collaboration with the Department of Religious Affairs, MAC, and UNDP, the MOH has been seeking the involvement of religious leaders, and their participation in joint efforts to educate and to initiate or support community programmes related to HIV/AIDS (Box 6.2). Other targeted interventions are carried out by relevant NGOs and international organizations.

Box 6.2 SEEKING SUPPORT FROM MUSLIM LEADERSHIP

To prevent the spread of HIV/AIDS and reduce its impact, the mobilization and involvement of all in society is crucial. UNDP in Malaysia has been a strong advocate of the involvement of religious leaders, in particular, Muslim religious leaders. In June 2001, UNDP, in partnership with the MOH, the Department of Islamic Religious Affairs, and the Malaysian AIDS Council (MAC), initiated a three-year project to involve Islamic religious leaders in the response to HIV/AIDS.

Objectives

The primary objectives are: (i) to develop a methodology for increasing awareness of HIV/AIDS among religious leaders and within Muslim communities; (ii) to enhance the knowledge of the disease and to promote appropriate action for prevention, care, and support; (iii) to develop a strategy for the involvement and commitment of Islamic religious leaders—a process that focuses on building commitment and increased involvement.

A comprehensive training manual has been developed through the project to help achieve these objectives.

Challenges

Convincing Muslim religious leaders at community, as well as government level was challenging for several reasons: (i) they don't want a special focus on Islam and HIV; (ii) they don't see HIV/AIDS as a health issue; (iii) they are wary of the sensitivity attached to the topic of HIV/AIDS; and (iv) religious leaders were unaware that HIV/AIDS is a growing problem in Malaysia.

Lessons Learned

The process of finding key partners in the Department of Religious Affairs and finding a key spokesperson, as well as trusted trainers, turned out to be the key ingredient for the success of the project. Building partnerships has also been of crucial importance for upscaling activities. These partnerships helped to build a consensus on the content of the training manual and of the organization of national workshops. This manual has subsequently been used for training at all levels, with all partners taking ownership of it. It will also be used as a resource in the Department's training programmes.

Programmes

HIV/AIDS prevention, control and treatment programmes in Malaysia, including surveillance, are driven through multi-stakeholder interventions, especially by the government, but also by NGOs, civil society, and international agencies. Programmes range from activities in prevention to treatment and care, and include fund-raising.

HIV/AIDS data collection

Under the Prevention and Control of Infectious Diseases Act 1988, all forms of HIV infections must be notified to the nearest district health authority. In addition, various surveillance strategies have been initiated, including routine screening, HIV sentinel surveillance, and *ad hoc* studies, such as those on commercial sex workers. Surveillance is carried out to obtain data on the epidemiological characteristics and profile of the disease, including risk factors, age, sex, ethnicity, and emerging groups at risk.

Routine screening has been carried out on all blood donors since 1986. Since 1989, routine screening has also been carried out among injecting drug users and sex workers in correctional institutions and at all drug treatment and rehabilitation centres. This has been expanded to prisons and homes for female delinquents. Malaysia had a well-developed HIV sentinel surveillance system in place which started in 1994 to screen women attending antenatal clinics (ANC), patients with sexually transmitted infections, and patients with tuberculosis. Sentinel surveillance was discontinued at the end of 1997 as these target sentinel groups were included in routine screening activities. HIV screening is now an institutionalized programme and is carried out nationwide in both government and private medical facilities using WHO-recommended strategies.

At the district level, reports (from the government and private sector) on HIV/AIDS cases are submitted to the state AIDS/STD unit which then compiles reports from the districts before submitting them to the national AIDS/STD unit of the MOH's Department of Public Health, Disease Control Division. Information collected includes age, sex, date, and place of occurrence, associated risk factors, and actions taken against the spread of the disease. HIV/AIDS surveillance in Malaysia is based on nominal (with name) notification. All reporting of confirmed cases is done using a format that requires such information as the name, socio-demographic data, address, date of confirmation, risk factors, contact information and so on.

Malaysia's experience shows that a strong surveillance system is integral to efforts to combat the HIV/AIDS epidemic. The availability of data helps decision makers and health professionals to understand the diseases better and to plan intervention strategies and actions. While institutionalizing surveillance is important, experience in carrying out special *ad hoc* evaluations is equally important to respond to rapid changes in the epidemic and enable more relevant and appropriate interventions.

Safe blood

One of the earliest measures taken to control the spread of AIDS in the country was to prevent the transmission of HIV through donated blood. A safe blood programme was proposed in early 1986 and routine screening of donated blood was started in six states in April that year. This was extended to all states nationwide by the end of that year. By 2003, 52 designated screening centres in all general hospitals and most district hospitals throughout the country routinely screen all donated blood for HIV. Each centre then files regular reports to the HIV/AIDS section on the results of tests done.

Positive results are confirmed by the Institute for Medical Research, a key medical research centre in the country, which has been designated the National AIDS Reference Laboratory. A follow-up investigation is then carried out for every HIV-positive blood donor. Donor referral is also carried out using questionnaires to eliminate donors with high-risk behaviour, such as those who have or engaged in multiple sex partners, homosexual activities, or who are intravenous drug users. Donors are also required to sign a declaration that he/she is free from the risk of HIV infection.

Various rules were put in place to ensure safe donors and safe blood for transfusions, such as having voluntary, regular blood donors who do not receive payment. Replacement donors were phased out and blood banks ensured adequate blood supplies to meet the demands of hospitals so that paid donors and those with high-risk behaviours, for example, injecting drug users, do not donate blood for financial reasons. Donors are encouraged to donate blood regularly, that is, at least once or twice a year. The MOH also issued directives to the medical fraternity on the judicious use of blood transfusion for patients, including using alternatives to blood.

Every donation is screened for anti-HIV, using reliable, quality-controlled tests carried out by well-trained staff. Blood is quarantined until the anti-HIV results are available and released only after the test results are ready. Quality assurance measures include Standard Operating Procedure, documentation, regular servicing of machines, stable electrical supply, staff training, continued medical education, and computerizing of data to reduce mistakes.

The efficacy of the safe blood programme is reflected in the low number of infections from blood transfusion: 19 cases over 14 years. Nevertheless, besides clerical mistakes, HIV-infected blood can escape detection during screening due to the 'window period' of the viral infection. To reduce this possibility, alternate sites were made available for voluntary HIV testing. Yet, in 2002, five cases of infected blood were reported despite various criteria for eligibility of blood donation. This calls for an urgent need to look into procedures and other quality control measures at blood donation centres. The MOH also controls the import of blood products by centralizing procurement and importing only products that have been tested using approved methods and certified.

Prevention of mother-to-child transmission

HIV testing is carried out on all women attending government antenatal clinics after a group information and education session by a nurse or from a video presentation. Women found to be HIV-positive are given post-test counselling and free anti-retroviral treatment.

Drugs are given throughout the antenatal and intra-partum period. Infants are given drugs for the first 6 weeks of life. The HIV antibody test is done on infants at regular intervals until they are confirmed negative at 2 years of age. Follow-up is carried out on HIV-positive mothers who are also advised not to breastfeed their infants.

Since the programme first started in 1998, the percentage of antenatal mothers screened for HIV has been increasing every year. Table 6.2 shows that 93 per cent of antenatal mothers who attended government antenatal clinics throughout the country were screened for HIV in 2002, compared with about 50 per cent in 1998. Prevalence of HIV-positive mothers (pregnant women) in Malaysia has been consistently below 0.04 per cent since 1998. Considering HIV prevalence among pregnant women as a proxy, this indicates that HIV prevalence amongst the Malaysian general population is still very low. In 2002, with 92.8 per cent of mothers screened, the percentage of positive babies born to positive mothers was 4.55 per cent, which is very much lower than the estimated rate of vertical transmission—about 30 per cent without AZT (zidovudine) prophylaxis. This reduction in transmission rate is laudable in terms of clinical management.

Table 6.2 Prevention of Mother-to-Child Transmission Programme, Malaysia, 1998–2002

Year	1998	1999	2000	2001	2002
Total no. of pregnant women attending government ANC clinics	323,902	416,400	347,979	392,139	387,208
No. of pregnant women screened for HIV	161,087	276,000	286,390	343,030	359,411
Percentage	49.7	66.2	82.3	87.5	92.8
No. of pregnant women detected HIV-positive	56	89	85	79	141
Percentage	0.035	0.032	0.029	0.023	0.039
Total no. of babies delivered	56	89	85	79	110
No. of babies HIV-positive	3	5	3	1	5

Sources of data: Malaysia, Ministry of Health, *Annual Report*, various years.

With a 5.3 per cent increase in the proportion of antenatal women screened in 2002 compared to 2001, the number of HIV-infected women detected almost doubled from 79 to 141 cases among those screened under the Mother-to-Child Transmission (MTCT) Programme. The almost 80 per cent increase in 2002 from the previous year is cause for concern. Further data are required to show whether the trend continues. Heterosexual transmission was the main reported risk factor associated with HIV-infected mothers.

Education and awareness

Health education is an important part of the government's strategy towards promoting a healthy nation and is conducted on a regular basis nationwide on various health issues.

Information is disseminated through the mass media, health care facilities, schools, NGOs, and community groups.

In collaboration with the MOH and UNICEF, the government has implemented a large-scale education programme on HIV/AIDS for youths known as PROSTAR (Program Sihat Tanpa AIDS untuk Remaja) in 1996. PROSTAR, or the AIDS prevention health programme for youths, is targeted at those aged 13-25 years. The programme, which has the theme, 'Action by Youth, for Youth and Through Youth', uses peer education to disseminate messages. Activities under PROSTAR clubs include counselling, exhibitions, health camps, and economic ventures. By the end of 2003, 1,099 PROSTAR clubs had been established throughout the country and training provided to 64,000 peer counsellors, reaching out to more than 600,000 youths.

The 13-25 age group is considered a priority as about 36 per cent of HIV cases in the past few years were among those below 29 years. This corresponds with data from the National Drug Agency, under the Ministry of Home Affairs, which reported 36,996 drug addicts, new and recurring, in 2003, 45 per cent of whom were under 30 years of age, and 24 per cent, below 25 years. There is also evidence from various surveys that Malaysian youths are sexually active, without protection. For example, one study in 1994 found more than 18 per cent to be sexually active. Furthermore, a 1996 study on youths and AIDS showed a strong linkage between smoking and substance abuse, as well as, with sexual experimentation.

An intervention study was conducted to determine the efficacy of the PROSTAR programme. The study revealed a significant increase of awareness among those surveyed on the use of condoms as a prevention measure, HIV infections through injecting drug use, and the transmission of HIV infection from mother to child. However, there were still some misconceptions, including the belief that only drug addicts, prostitutes, and homosexuals were those infected. Nevertheless, the level of awareness among PROSTAR club members was higher than among non-members. Non-members were also more likely to perceive those with HIV/AIDS negatively. Based on these findings, the study made some recommendations, including simplifying messages and delivering messages through channels to which youths respond; ensuring that selected facilitators remain actively involved; and encouraging increased participation in PROSTAR clubs. Related to this, the 1996 study on youth and AIDS mentioned above also concluded that exposure to messages on AIDS does not necessarily increase awareness of AIDS among youths. The medium of AIDS education needs to be studied to ensure that messages get across to youths and that these messages result in behavioural change.

The PROSTAR evaluation shows that prejudices and misconceptions on who gets infected with HIV/AIDS remain entrenched, even after focused small-group training programmes. These misconceptions remain a barrier to HIV/AIDS prevention among the general public.

There have been mass media campaigns in the past decade aimed at raising awareness on HIV/AIDS. These have been broadcast through television and radio, as well as through posters and booklets distributed through various channels. The government, NGOs, and the private sector are involved in these efforts which have

yielded positive outcomes. Thus surveys show a growing awareness of HIV/AIDS among Malaysians but whether behavioural changes have followed suit, and have been sustained, remains to be determined.

Treatment, care, and support of HIV-infected persons

Considerable progress has been made in the area of clinical treatment in recent years. The number of people on highly active anti-retroviral therapy (HAART) has increased considerably, jumping fourfold in the last two years to about 1,500 persons. Almost all general hospitals offer treatment, with special HIV/AIDS clinics having assigned physicians in five major hospitals.

HIV-infected patients are required to attend regular follow-up treatments every three to six months. Treatment is available for all those who are compliant. About one-fifth of all people with AIDS receive HAART. The government currently subsidizes two drugs while patients pay for one. All drugs are free for pregnant women, children, government servants, and those infected from blood products. There are some efforts to import cheaper drugs. Treatment for opportunistic infections is available in all hospitals and subsidized by the government. In many state hospitals, some full-time nurse counsellors are available, based in clinics. Nationwide, there are now 10 specialists in infectious diseases (although some are under training), whereas in 1998, there were only two.

The MOH has taken measures to make ART accessible and affordable by importing cheaper generic ART drugs from India. The cost of treatment is no longer a serious issue. The MOH has also started a programme to provide ART to IDUs in closed settings through a project in Pusat Serenti Serendah, Selangor. However, seeking treatment also involves associated costs of time off work, transport, and lodging.

Role of NGOs

NGOs play a critical role in HIV/AIDS programmes and advocacy in Malaysia. Several NGOs focus on differing and complementary HIV/AIDS activities which form the main contribution to the HIV/AIDS programme in Malaysia. Many, but not all, are affiliated to the MAC, which plays a leadership and coordinating role in NGO work on HIV/AIDS. There are currently in excess of 30 organizations under the MAC's umbrella.

Notable among NGOs involved with HIV/AIDS is the long-established Federation of Family Planning Associations of Malaysia (FFPAM). This parent body of state-level organizations has a more comprehensive and widespread prevention programme through its nationwide network of 42 reproductive health clinics. Working with its state associations, it has set up youth clubs and peer groups in schools, and organized skills-building workshops with a reproductive health module that have reached thousands of youths.

The Community AIDS Service Penang (CASP) supports awareness-raising, counselling, outreach with marginalized groups, such as sex workers, and psychosocial support to people with HIV/AIDS, focusing on northern Peninsular Malaysia. Other organizations doing similar work include the Pink Triangle Foundation, the first AIDS NGO, based in Kuala Lumpur. Programmes targeted at marginalized groups include

information and counselling, referrals, shelter, basic medical treatment, care and support. About 10 NGOs offer some shelter or day care and support for people with HIV/AIDS, such as *Pelanggi*, Bread of Life, Shekinah Home, Women and Health Association of Kuala Lumpur (WAKE), *Persatuan Perantaraan Pesakit Pesakit Kelantan* (SAHABAT) in Kota Bharu, Kelantan, and Intan Drop-In Society in Teluk Intan, Perak. Most shelters house less than 10 people and are urban-based. *Rumah Solehah* in Cheras, Kuala Lumpur, provides care and support, including treatment, to HIV-positive women and children. Welcome Home Community in Batu Arang, Selangor, provides shelter and half-way houses for more than 100 persons.

Support networks for people affected by HIV/AIDS are limited. Several NGOs offer a secure environment for affected women to support each other and share experiences. A few NGOs offer peer-based treatment models in working with drug addicts. *Persatuan PENGASIH Malaysia* (PENGASIH) in Kuala Lumpur uses the 'therapeutic community' approach for its drug-dependent clients. PENGASIH also offers a drop-in centre for street-based drug users, individual and group counselling, and some outreach. Another drop-in centre is *Ikhlash*, also based in Kuala Lumpur which offers basic services, such as cleaning wounds and offering free meals. A significant number of prisoners are infected with HIV/AIDS, for which Malaysian Care, an NGO, offers an awareness programme, peer counselling, and simple nursing care. There are a few other NGOs not affiliated to MAC that provide support networks for people living with HIV/AIDS (PLWHA).

Future challenges

For Malaysia to halt and reverse the spread of HIV/AIDS, considerable challenges lie ahead. So far, prevalence among the general population is still low and the epidemic is concentrated. This means that there is much potential for containment provided concerted actions are taken.

Policy and strategy guidance

The National Strategic Plan, formulated in the early 1990s, will be reviewed and updated to comply with current national priorities related to HIV/AIDS as well as to meet the United Nations General Assembly Special Session (UNGASS) prevention and care targets. This process of revision will involve all key stakeholders to ensure a coordinated, multisectoral, and effective response. Implementation will also require the mobilization of additional resources to upscale many ongoing programmes and projects.

Focusing prevention

In many countries, including Malaysia, injecting drug users and sex workers remain the most important focal points for effective HIV prevention. Therefore, there is a need to implement a basic package of HIV prevention services and ensure access to vulnerable

groups, especially women and girls. The relatively high prevalence among young people and substance abusers necessitates programmes that target these groups to change their behavioural patterns.

Injecting drug users. Injecting drug users account for some 75 per cent of HIV/AIDS cases. The government takes a very strong stance against illicit drug use and aims to have a drug-free society by 2015. However, severe penalties have not curtailed substance abuse and dependence in Malaysia. In 2003 alone, 20,200 new substance abusers were documented by the National Drug Agency, plus another 16,800 relapse cases. Suspected drug users are detained and tested and, if certified positive, are admitted to a rehabilitation centre for 18 months to 2 years. However, the relapse rate from such centres, estimated to be around 75 per cent is high. There may be a case for considering harm reduction programmes, such as substitution therapies or needle syringe programmes.

A few NGOs are working with injecting drug users, including providing halfway houses for HIV-positive discharged prisoners, as well as with drug users in the community. Consistent follow-up and support is important to ensure that rehabilitated drug users do not revert to their habits. These NGOs have reported some successes but their funding and manpower continue to be limited. In addition, work with drug users is not considered part of the national HIV prevention strategy.

Sex workers. The sex industry in Malaysia is illegal and clandestine. Many sex workers operate part-time, freelance, or through entertainment outlets, such as karaoke bars and massage parlours. Among the general population, the concept of commercial sex tends to be confined to sex for money. Knowledge of commercial sex workers on HIV needs to be improved, given that it can spread rapidly from a small pool of infected sex workers to the general population. An NGO, WAKE, works directly with sex workers. WAKE's outreach workers see about 200 women every week in four localities in Kuala Lumpur, offering HIV education, counselling, and free condoms as well as providing a drop-in centre and a halfway house.

STI patients. Patients with sexually transmitted infections (STIs) serve as a good proxy indicator for risk of HIV infection as some STIs greatly facilitate the risk of HIV transmission. STI treatment is thus critical in HIV prevention. The government has stepped up STI treatment through a programme called Modified Syndromic Approach to STI patients started in 2000. By 2003, there were more than 120 health clinics with trained staff and laboratory support throughout the country, as well as providing STI management and HIV/AIDS education, counselling, and information.

Correcting misconceptions

Leadership at all levels is essential to address social issues arising from HIV/AIDS. The current statistics on risk groups publicized in mass media campaigns may have the undesirable effect of implanting in the public the belief that HIV/AIDS is a problem only amongst certain groups, namely, substance abusers and sex workers. The national AIDS prevention strategy will continue to give greater emphasis to project HIV/AIDS in the context of national development, and the insidious ways the disease can impede

development progress if not checked. There is a need to promote multisectoral responses to HIV/AIDS, by investing in effective prevention technologies, and increasing capacity through better training of health and community workers.

Religion and culture. Religious leaders can contribute much towards correcting public misperceptions. MAC and other NGOs are making some progress. Representatives from religious bodies have been invited to participate in various seminars/conferences and dialogues. As all religions encourage love and compassion, continued multireligious dialogue could be a starting point to correct misconceptions and discriminations of those infected with, and affected by, HIV/AIDS. Strengthening inter-faith networks could be another strategy to overcome prejudice and to provide help and care to those in need.

Counselling

Counselling, pre-tests, and post-tests for HIV-infection are an integral part of prevention and care. Counselling of people with positive test results facilitates acceptance of the results and prevention of transmission to partners; it also serves as an entry point for timely HIV/AIDS treatment, as well as a referral point for social and peer support. Counselling of people with negative test results opens the way for behavioural change to remain negative. The lack of health-related human resources and trained volunteers to provide counselling continues to be a challenge in Malaysia.

Behavioural surveys, impact studies, and data management

Experience in many countries has shown that once HIV infection enters a population subgroup, it can spread rapidly to the rest of the population. Current HIV surveillance on a population sub-group provides useful information on new cases but does not adequately explain the nature and evolution of the epidemic. Second-generation HIV surveillance systems have been developed to integrate such information with 'behavioural surveillance'. These include ongoing monitoring of HIV risk behaviour among population subgroups to determine the potential for spread within that group and to other population subgroups. They can also inform and assess HIV prevention programmes.

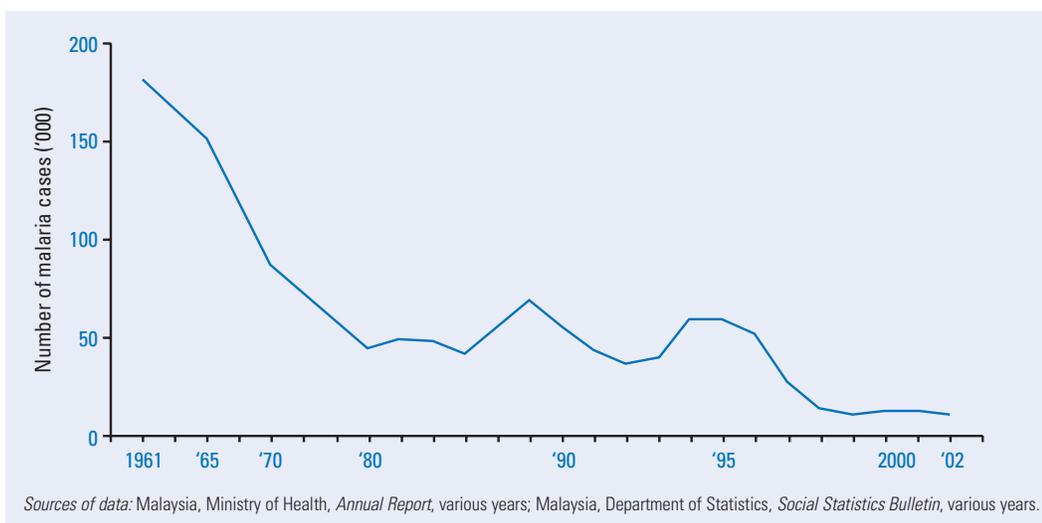
The MOH, together with WHO and local NGOs, has implemented the Behavioural Surveillance Surveys (BSS) in 2003/4. The surveys involve commercial sex workers and IDUs in five states, namely the Federal Territory of Kuala Lumpur, Johor, Sarawak, Pulau Pinang, and Kelantan.

In addition, there is a need to conduct surveys to monitor the impact of HIV/AIDS at individual, family, and community levels to gauge the level of awareness of policies and programmes. Surveys, however, can be costly, and thus resources will need to be mobilized. Ways need to be found to include relevant questions in existing routine data collection protocols, so that HIV/AIDS can be monitored through a wider range of indicators. Equally important, a data collection system should be established that ensures easy retrieval and utilization, with due attention given to the quality of the data, as well as their evaluation and analysis.

Trends and patterns in malaria

Malaysia has achieved major success in virtually eliminating malaria from urban and other densely populated areas. Before 1960, there were about 300,000 cases per year. However, the number was reduced to about 181,000 cases per annum by 1961, and major reductions continued in the following decades, dropping below 50,000 in the early 1980s to 11,000 cases in 2002 (Figure 6.6).

Figure 6.6 Number of Malaria Cases, Malaysia, 1960–2002



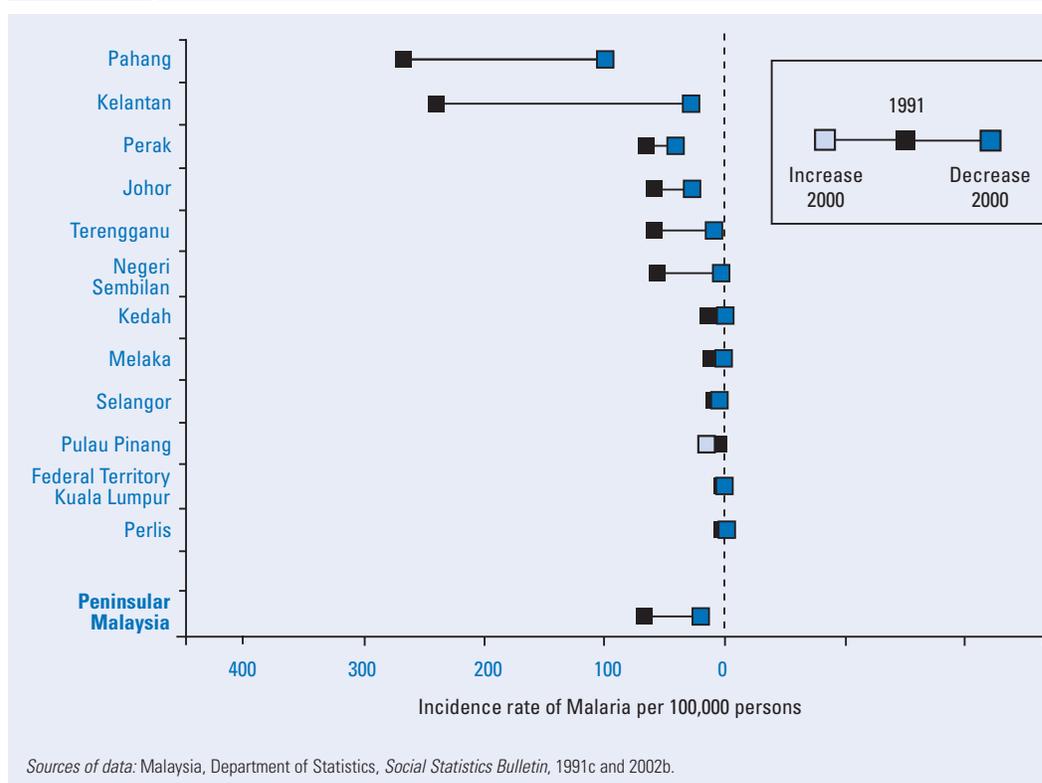
Generally, the incidence of malaria has declined from as high as 1,400 cases per 100,000 persons three decades ago to 45.2 per 100,000 persons in 2002. The number of medically inspected and certified deaths from malaria also declined from 62 cases in 1991 to 20 in 1998 (Malaysia, Department of Statistics, 2000_a). In terms of vector-borne diseases, Vital Statistics figures on notifiable cases available for 2001 showed that there were more cases of dengue and dengue haemorrhagic fever (16,400) than malaria (12,800) in the country.

In Peninsular Malaysia, the greatest declines in malaria during the 1990s have been in those states with the highest rates, namely, Pahang and Kelantan (Figure 6.7). These states are also among the less developed and least urbanized areas of Peninsular Malaysia. Figure 6.7 further shows that certain areas in Peninsular Malaysia, namely Perlis, the Federal Territory of Kuala Lumpur, Selangor, Melaka, and Kedah, had virtually eliminated malaria by year 2000. However, the number of cases in the less developed and more rural East Malaysian states of Sabah and Sarawak (approximately 216 and 142 per 100,000 respectively in 2001) remain far higher than those in the states in the Peninsula.

In addition, the risk of malaria is high among the *Orang Asli*, who live in the rural interior regions. Malaria control in these groups is beset by poverty and its social

correlated factors, such as poor housing and environmental conditions as well as poor access to health care. However, if the decreasing trend achieved in Peninsular Malaysia continues nationwide, it is anticipated that local transmission of malaria would be halted with effective elimination of the endemic by the year 2015.

Figure 6.7 Incidence of Malaria, Peninsular Malaysia, 1991 and 2000



Programmes

In 1967, following a successful pilot study carried out by WHO during its Global Eradication Campaign (1955 to 1969), Malaysia embarked on a Malaria Eradication Programme (MEP) with the aim of eradicating the disease by 1982. Although it did not achieve this goal, the MEP laid a foundation in terms of infrastructure and control strategies for the subsequent Anti-Malaria Programme (AMP). Restructuring of health services saw the AMP expanded into the Vector-Borne Diseases Control Programme in 1985 and fully integrated into the public health programme in 1990. District health managers were given financial flexibility in implementing policy and managing funds. Six-monthly indoor spraying of houses in malarious areas with insecticides is still carried out

but the number of houses being sprayed has declined progressively over the years as areas are declared malaria-free.

Vector-Borne Diseases Control Programme and strategies

The MOH has long focused efforts on the control of vector-borne diseases, a major source of health burden for the country. At the national level, the Vector-Borne Diseases Control Programme (VBDCP) is a dedicated section under the Disease Control Division of the Public Health Department, MOH. It is a policy-making body that oversees the overall budgetary and human resource requirements, coordination, implementation, and monitoring of the control programme. At the state level, the VBDCP Section coordinates and monitors the implementation of control activities. The specific objectives of the national malaria control programme are (i) to reduce malaria morbidity and mortality, and (ii) to prevent re-establishment of malaria in areas with no indigenous cases

To achieve these objectives, the VBDCP formulated a series of integrated, multi-pronged control strategies that include:

- stratification and mapping of malaria risk areas
 - identifications of malarious, malaria-prone, and malaria-free areas
- early case detection
- parasite control: early and appropriate treatment
- effective and sustainable mosquito vector control
- protecting the human host
 - protection from and prevention of infection: bed-nets are distributed and treated free-of-charge in malarious areas
 - promotion of early treatment seeking behaviour if infected
- surveillance activities
 - early and quick case registration, notification, and recording by the reporting system
 - immediate case investigation
 - monitoring of process and impact indicators
- implementation of the quality assurance programme procedures
- research contributing to the formulation and evaluation of health programmes.

Insights gained

The success Malaysia has achieved in combating malaria is the product of several factors: an understanding of the location-specific epidemiology of malaria throughout the country; the adoption of a combination of strategies targeting the host, parasite, mosquito, and environment; the integration and coordination of infrastructural resources with good collaboration between key players; and the formulation of a clear policy, with defined targets and legislative support.

The reorganization of the public health care system from a three-tier to a two-tier system in the 1990s, comprising a widespread distribution of rural health clinics (*klinik desa*) and the better equipped community clinics (*klinik kesihatan*) in the ratio of 2.3:1, makes primary health care accessible to a majority of the population. This has contributed to the early detection and treatment of malaria cases, distribution of prophylaxis, as well as dissemination of information, through educational and communication activities.

That malaria has persisted in rural, more isolated areas, primarily in Sabah and the interior regions of Sarawak and Pahang merits attention. Travel advisories still include malaria prophylaxis for these areas which include national parks, now popular tour destinations, and interior areas with development projects, such as highway and dam construction. Furthermore, as the incidence of malaria declines in the country, the pool of non-immune groups within the population is expected to increase. This group will be exposed to risk as domestic travel becomes more feasible, particularly for nature or adventure forays into the undeveloped hinterland. There is thus a need to identify in greater detail and address the barriers to effective malaria control in the persistent malaria regions in the country as they bear the potential of an epidemic or re-establishment of the disease.

Future challenges

Malaysia has been successful in controlling malaria in the most endemic areas and increasingly extensive areas have been declared malaria-free. The main challenges now relate to sustaining these achievements. They include (i) overcoming the danger of complacency, that is, maintaining pressure on the host-vector-environment transmission dynamics, and maintaining active surveillance and early warning systems; (ii) preventing the re-introduction of malaria in malaria-prone areas; (iii) ensuring the early detection and effective management of a malaria epidemic, that is, people no longer exposed to infection gradually lose their general immunity, and outbreaks can still occur if changes to the environment facilitate proliferation of the mosquito vector; (iv) dealing with the problems of drug-resistant strains of malaria; and (v) declining diagnostic and management skills among clinicians—malaria is rare in urban areas and is essentially a rural health problem.

Trends and patterns in tuberculosis

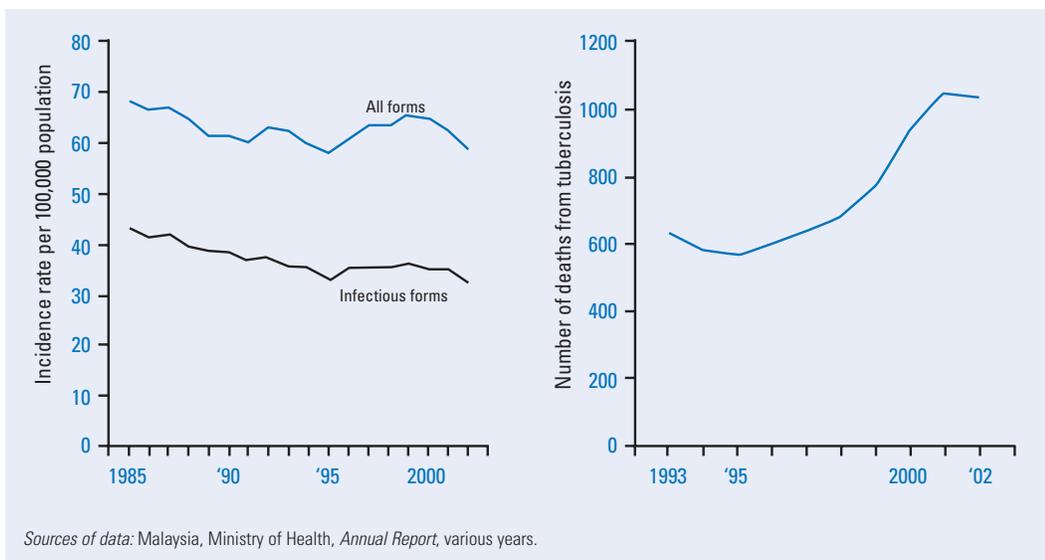
While the occurrence of Tuberculosis (TB) has historically been associated with weak health systems, poverty, and overcrowding, additional contemporary phenomena, such as human mobility, multi-drug resistant TB, and co-infection with HIV/AIDS, are raising new issues and difficulties in treating the disease and controlling its spread.

Half a century ago, TB was a leading cause of death in Malaysia. Now, early in the twenty-first century, despite reductions in poverty and improvements in the control and treatment of the disease, TB remains a significant health issue with more deaths each year than from any other notifiable infectious disease, including AIDS and malaria. Indeed, there were more new TB cases (14,400) notified in 2002 than for any other infectious disease apart from dengue fever. TB also had the highest number of deaths (1,300) among infectious diseases in 2002, far exceeding those from dengue or malaria, which recorded around 50 deaths each. Only the toll from AIDS, with 881 deaths, approached this figure and the recent emergence of TB as a co-infection with HIV/AIDS is a matter of growing concern.

Significant progress was made in the 1980s in reducing the incidence of all forms of TB, with notified cases dropping from 68 per 100,000 in 1985, to about 58 per 100,000 in 1995. However, notification rates followed an upward curve peaking around 65 per 100,000 in 1999 before reverting to about 59 per 100,000 by 2002 (Figure 6.8). The upward trend observed in the latter half of the 1990s was less obvious for infectious forms of TB, suggesting that non-infectious forms may be contributing to the (possibly temporary) change in trend. Although the incidence rate in the population has decreased over the past 15 years as shown in Figure 6.8, the number of TB deaths has continued to increase (Figure 6.9).

Figure 6.8 Incidence Rate of Tuberculosis, Malaysia, 1985–2002

Figure 6.9 Number of Tuberculosis Deaths, Malaysia, 1993–2002



Following the implementation of the WHO-recommended DOTS (directly observed treatment, short course) strategy in 1999, the TB incidence rate started to decline from the year 2000 onwards, albeit at a rate of less than five points annually (Figure 6.8). A somewhat similar pattern appears to have occurred in the number of TB deaths which it rose through the mid-1990s but declined in 2002 (Figure 6.9). If the post-2000 decline were to continue at an average rate of four points per year, Malaysia will likely achieve the

2010 target in TB control set by the MOH (Table 6.3) and the MDG target of halting and beginning to reverse the incidence of TB by 2015.

Table 6.3 Incidence Rate of TB (Based on Case Notification), Malaysia, 2002

New cases detected	2010 target	2002 status
TB (All forms)	40/100,000 population	58.7/100,000 population
TB (Infectious forms)	20/100,000 population	32.4/100,000 population

Sources of data: Malaysia, Ministry of Health, *Annual Report*, various years.

However, at present, WHO ranks Malaysia as a country with an 'intermediate burden' of TB. WHO describes the country's TB notification rate as 'high relative to its level of development' and warns that, given favourable conditions, an escalation in incidence in TB could readily surge to epidemic proportions, implying that a sustained and effective TB control programme is essential.

State differentials

Among the states and federal territories, Sabah and Kuala Lumpur have recorded incidence (notification) rates for TB above 100 per 100,000 persons. Four other states in the country have recorded incidence rates of 50 to 100 cases per 100,000 persons, namely Sarawak, Kelantan, Perlis, and Pulau Pinang. The distribution of these rates shows that there is still a strong association between TB and rural poverty (in Perlis, Kelantan, Sarawak, and Sabah), size and mobility of migrants/migrant worker populations, especially in Kuala Lumpur and Sabah, and urban poverty and overcrowding in Kuala Lumpur and urban areas in Sabah. The rates in Kuala Lumpur tend to be inflated due to out-of-state patients being referred to or seeking treatment in the city.

Unlike malaria, the TB incidence rates increased in all states in Peninsular Malaysia over the past 10 years up to 2000, except in the north-eastern state of Kelantan (Figure 6.10). The increases in each state coincide with the rising trend in incidence observed in the latter half of the 1990s for Malaysia generally, as described above.

Tuberculosis by age

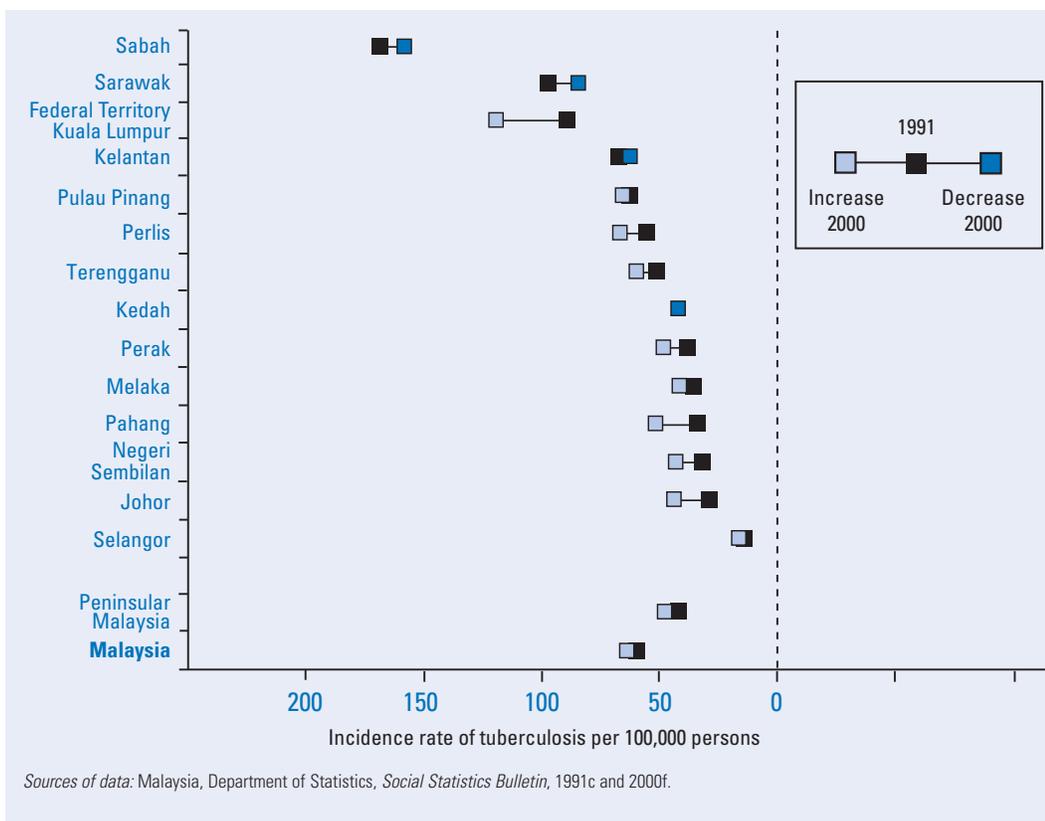
The incidence of TB is low amongst children, but is much higher for young adults and those over 60 years of age. In 2002, over three-quarters of those infected with TB were aged between 15 and 59 years and about one-fifth were over 60 years of age. Only 3 per cent were under the age of 15.

Tuberculosis among immigrants

The inflows of foreign workers pose some risk in raising TB rates, as the incidence of tuberculosis is much higher in neighbouring countries, such as Indonesia (about five times) and the Philippines (about four times), than in Malaysia. Migrant workers are also sourced from other South-East Asian nations, as well as the Indian subcontinent. Although medical

fitness examinations are a mandatory prerequisite to obtaining work permits, there is the possibility of latent infection. In addition, the presence of a substantial number of illegal migrants, who are highly mobile within the country as well as across borders, and who do not undergo any health screening, further complicates effective control of the disease.

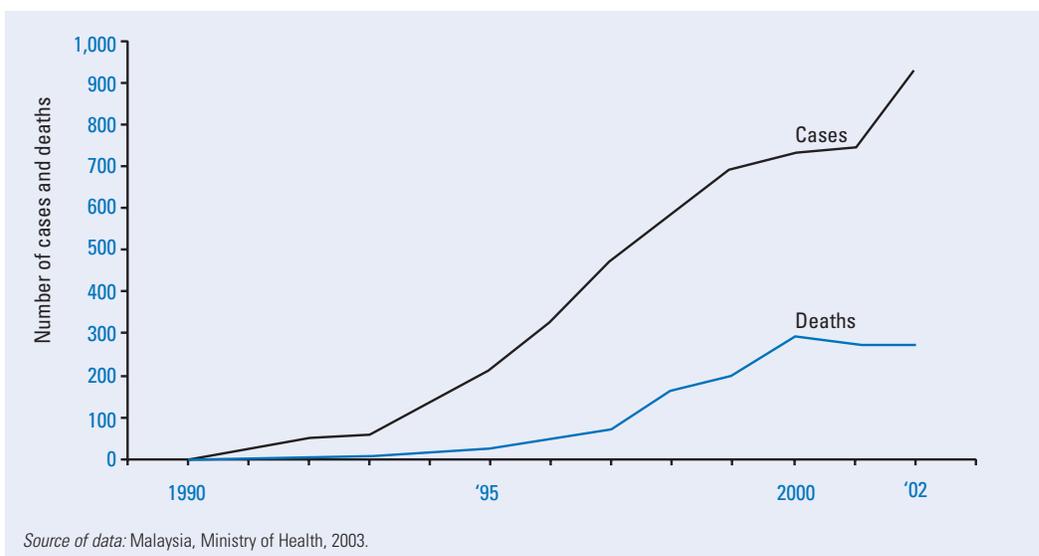
Figure 6.10 Incidence Rate of Tuberculosis, Malaysia, 1991 and 2000



TB with HIV

In 1990, only six cases of TB with HIV co-infection were reported out of the total 11,000 TB cases notified. However, TB co-infection with HIV rose steadily and steeply in the 1990s, alongside the escalating HIV/AIDS epidemic reaching 750 TB-with-HIV cases reported in 2001 and 900 cases in 2002 (Figure 6.11). The number of deaths attributable to TB with HIV did not show a comparable increase, registering less than 300 deaths in 2002 (Figure 6.11) compared to a total of 5,400 AIDS-related deaths in that year. This may be due to the long incubation period and long-wave nature of these illnesses. Globally, tuberculosis is a significant cause of death among AIDS patients. Nonetheless, the magnitude of TB co-infection in this country is expected to continue to increase with that of HIV infections. There is cause for concern in the light of the highly infectious nature of active TB and evidence that TB can accelerate the development of AIDS in HIV-infected persons.

Figure 6.11 Number of TB with HIV Cases and Number of Deaths, Malaysia, 1990-2002



Programmes

National TB control programme and strategies

The National TB Control Programme was set up in 1961 to control and reduce the prevalence of TB throughout the country. The programme, now under the Section of Communicable Diseases, Disease Control Division of the Department of Public Health, MOH, was decentralized in 1995 so that states are responsible for their own TB control and prevention measures. The objectives of the Malaysian TB Control Programme, consistent with WHO objectives, are (i) to reduce the prevalence rate by half by 2010; (ii) to ensure an 85 per cent cure rate among newly detected smear-positive cases; (iii) to ensure that 100 per cent of smear-positive cases are on DOTS by 2005; and (iv) to detect at least 70 per cent of estimated smear-positive cases.

Strategies towards attaining the objectives of the TB Control Programme include (i) BCG vaccination for all newborn babies; (ii) screening of symptomatic cases and high-risk groups, including mandatory screening of foreign workers and HIV patients in prisons and drug rehabilitation centres; (iii) raising awareness of the disease through the mass media; (iv) training health staff about the disease; and (v) conducting research related to TB epidemiology and treatment outcomes, including a national TB prevalence study and a multi-drug resistance survey.

Detection and treatment

Early case detection and prompt treatment are essential to reduce transmission of TB in the community. As with malaria control, the widespread network of community-based primary health care facilities throughout Malaysia facilitates early case detection. However, TB, a highly contagious disease, is more likely to miss detection for a longer period because of its asymptomatic stage and late health-care seeking behaviour. Once detected, cases are registered at the district health office and followed up at health clinics. Contact tracing is done for all those living under the same roof as the TB patient, as well as for co-workers in all occupations. The comprehensiveness of contact tracing depends on the resources available. Moreover, compliance with the protracted treatment regimens is a well-recognized problem worldwide. The WHO recommends DOTS, an effective strategy for TB treatment whereby patients are observed taking their drugs so as to ensure that they are maintaining their regimen. Cure rates reach 95 per cent—double that of non-DOTS regimens—for a modest cost. With the implementation of the DOTS strategy since 1999, all government health facilities offer free treatment to all TB patients. The procedure involves a supervised treatment for 6-8 months under direct observation by trained supervisors followed by, regular, uninterrupted supplies of anti-TB drugs. A standardized recording and reporting system that allows assessment and audit of the efficacy of the strategy is then implemented.

By implementing the DOTS strategy nationally, the government has demonstrated its commitment to sustained TB control activities. However, despite the relatively high prevalence of TB there is little information on public knowledge and perceptions of the disease in Malaysia. There is probably a measure of stigma attached to TB since it tends to be associated with poverty and unhealthy living conditions. This lack of knowledge and stereotyping may be obstacles to TB control.

Future challenges

Although there are well-established control strategies and treatments for TB, it still remains the most serious infectious disease in Malaysia, in terms of incidence and deaths. The key challenges that remain in combating TB in Malaysia include (i) increasing awareness of the disease among clinicians and medical personnel, as well as among the public; (ii) reducing poverty and optimizing access to medical facilities, especially in rural and remote areas; (iii) ensuring 100 per cent of identified cases are incorporated in the DOTS programme; (iv) achieving more effective follow-up of patients who are defaulting on their treatment regime; (v) improving the screening and routine monitoring of infected migrant workers to increase treatment and reduce infection; (vi) curbing the accelerating occurrence of co-infection with HIV; and (vii) pre-empting and/or dealing with the rise of multi-drug resistant TB.

Future directions for HIV/AIDS, malaria, and tuberculosis

The magnitude and health burden of HIV/AIDS, malaria, and tuberculosis on a global scale have warranted their inclusion as specific MDG targets by year 2015. Over the past 50 years, infectious diseases have assumed a lesser significance in Malaysia relative to non-communicable diseases, along with development progress and spectacular reductions in poverty. The trends in absolute numbers, as well as incidence rates, have declined appreciably for malaria, but continue to rise in numbers for HIV/AIDS and TB. TB and AIDS are the leading causes of death from infectious diseases in the country. Both diseases are related to social problems, namely, rural and urban poverty, and intravenous drug use. There is no room for complacency in malaria control vis-à-vis existing areas where malaria persists, increasing drug resistance, loss of natural immunity, and population mobility within and between national borders. Increased efforts and resources will be put in place to eradicate and prevent the re-establishment of this disease.

Strategies in disease control need to be evidence-based with in-built operations research to evaluate outcomes and respond efficiently to changes in disease epidemiology. This is critical where resources are limited by increasingly higher programme costs and competing priorities. Implicit within this is the development of appropriate indicators by which to measure the attainment of objectives.

Several obstacles and challenges have been identified that need continued committed action, from policy to implementation and operations, applying multisectoral and intersectoral approaches and collaborations, as well as community participation and mobilization. The private sector, particularly the pharmaceutical industry, can contribute towards achieving the MDG targets through its research development on new drugs, pricing, and licensing policies. Besides this, religious leaders and institutions, have also been called upon to assist in the fight against HIV/AIDS in Malaysia. This includes the battle against substance dependence, particularly injecting drug use, thus far the primary source of HIV infection.

To be successful, experience has shown that such collaborative efforts need strong leadership, access to resources, institutional commitment, and recognition. The human factors in all approaches have to be given due regard. Disease prevention involves identifying not only the biological agents but also the social, economic, and cultural factors that enable or hinder health-promoting conditions and behaviours. To achieve the MDG targets, it is imperative that HIV/AIDS, malaria, and other diseases are firmly placed within a national multisectoral development framework.