EDITORIAL

Communicable diseases: A continuing threat in Malaysia

Introduction

The state of health of a nation has economic value in terms of promoting human economic productivity. Sickness due to communicable diseases or other diseases requiring treatment result in school and work hours lost. This and premature death is a calculable economic loss to the community.[1]

In Malaysia, the common causes of mortality between the post-war years and independence in 1957 were mainly communicable diseases such as malaria, tuberculosis, gastroenteritis and the like, which were largely associated with poverty and underdevelopment.[1] With the introduction of socio-economic development programmes through the five-year Malaysia Plans, communicable diseases as leading causes of death have given way to those diseases that are more related to development and modernisation, such as cardiovascular diseases and neoplasms.[2,3] However though they have declined, communicable diseases continue to cause considerable morbidity in the community. Today, except for smallpox, diseases such as tuberculosis, hepatitis, salmonellosis, sexually-transmitted diseases, hospital-acquired infections, influenza, measles, poliomyelitis, and malaria continue to occur and have yet to be eradicated or overcome. Epidemics of these diseases continue to occur in different parts of our country indicating their continued presence. In fact, it has been stated that they pose a continuous threat of returning probably with greater vengeance in the event public health measures could not be maintained or should our civilizations collapse for any reason.[4] As we in Malaysia enter the last decade of this millenium, it is timely to review our status with regards to communicable diseases including those factors that appear to maintain their presence in our midst, and seek ways to overcome them.

Communicable Diseases in Malaysia

Table 1 shows the current trends and status of our communicable diseases during the period 1983 to 1989.[5,6,8] It can be observed from Table 1 that there has been an increase in food and water-borne diseases like cholera, food poisoning, viral hepatitis and typhoid during the period 1983 to 1987. Most of these show a decline subsequently. Dengue fever/dengue haemorrhagic fever has increased while malaria continues to predominate as the category with the largest number of cases. Tuberculosis continues to be around despite our long efforts at the national level to battle it.

Table 1
Notifiable Infectious Diseases in Malaysia, 1983–1989

Diseases	1983	1984	1985	1986	1987	1988	1989
Cholera	2195	67	68	54	584	753	355
DF/DHF	790	702	367	1408	2025	1387	2528
Diphtheria	24	17	29	28	26	187	51
Dysenteris (all)	1182	1545	785	846	955	1011	634
Food Poisoning	1582	1700	1418	1877	2272	NA	NA
Leprosy	251	289	308	272	294	NA	NA
Malaria	19019	30424	46408	42710	33151	50848	54643
Measles	9313	8147	5163	4697	5429	4162	995
Poliomyelitis	2	2	4	0	0	0	0
Chancroid	27	49	47	143	171	NA	NA
Gonococcal Inf.	4742	4845	3777	5685	5409	NA	NA
Syphilis	556	849	928	1440	1887	NA	NA
Tetanus	36	64	49	51	86	NA	NA
Tuberculosis	9361	9156	8904	9421	9432	NA	NA
Typhoid & other Salmonellosis	1953	2000	2358	2845	2962	1546	1579
Typhus & other Rickettosis	94	159	173	166	262	NA	NA
Viral Encephalitis	47	45	40	53	92	109	51
Viral Hepatitis	3346	2223	3210	7261	4529	3918	1230
Whooping Cough	86	57	150	68	121	74	26

NA = Not Available
Source:
Ministry of Health Malaysia, Annual Report 1987[5]
Ministry of Health Malaysia, Indicators for monitoring and evaluation of strategy for HFA by the year 2000.[6]
Ministry of Health Malaysia, Weekly epidemiological record 1988–1989.[8]

The Ministry of Health[5] reported that during the period 1983–1987, cholera outbreaks occured, with the worst affected states being Kelantan and Kedah. In 1988 Sabah and Pulau Pinang were affected. Typhoid on the other hand predominated in Pulau Pinang, Kelantan, Sarawak, and Sabah. The latter two states and Johor were the worst affected states for dysentry. Of the viral hepatitis cases, approximately 72.7% were due to Hepatitis A infection, 16.5% were due to Hepatitis B infection and the remaining 10.8% were classified as others.

Diseases of childhood preventable by immunization continue to be an important focus of our health services. The incidence of these childhood immunisable diseases continue to decline with improvements in immunization coverage.[5,7] With the introduction of measles immunization

as a national programme, it can be expected that further declines in measles incidence will occur. Diphtheria despite being kept at low levels reemerged into the limelight when an outbreak occurred in Selangor in 1988.[8]

Sexually transmitted diseases, well known to be under-reported, continue to be a public health problem in the country. In this group, gonorrhoea was the commonest (80.1%) with the problem being highest in Sarawak, Wilayah Persekutuan and Sabah. Penicillinase Producing Neisseria Gonorrhoea isolates varied between 16.9% to 47.1% during the period 1983–1987. AIDS has arrived though its risk of occurrence at present is expected to be at low levels.[5] The number of AIDS victims currently is 14, while there are 519 carriers.[14]

There has been a downward trend in the occurrence of tuberculosis but this disease continues to be a public health problem as it is still one of the ten major causes of death with its present rank being number nine in Sabah and Sarawak. Coverage for B.C.G. vaccination in 1987 was reported to be 98.4%.

Vector-borne diseases continue to be a threat in Malaysia. Of the different diseases in this category, malaria is probably the most important. Seventy seven percent of Malaysia's population lives in non-malarious areas, 14.6% in malaria-prone areas and 8.4% in malarious areas. In Sabah, 17.2% of her population live in malarious areas while in Sarawak and Peninsular Malaysia, 11% and 4.3% respectively live in malarious areas. Most of the malaria cases occurring in Malaysia, especially in the last two years, have been due to cases occurring in Sabah. Dengue fever occurred almost throughout the country in the last three years.[8] It was reported that the emergence of 'rural dengue', transmitted by the outdoor *Aedes albopictus* significantly contributed to the high incidence of the disease. Filariasis is the other vector-borne disease of importance, with filariasis teams continuing to look for cases. Most of the cases in 1987 were found in Perak, Sabah and Sarawak.[5]

The Control of Communicable Diseases

Communicable diseases are due to the interaction between factors related to the host, the etiological agent and the environment. Methods of control of communicable diseases therefore focus on modifying these factors. Major approaches include reduction of host susceptibility, for example, through immunizations; alteration of the environment in an effort to eliminate sources or vectors of the etiological agent; elimination of opportunities for disease transmission; and inactivation of the infectious agent.[9]

The problem of communicable disease occurrence is common to both rural and urban areas. Occurrences in the latter are largely due to the growth of towns and cities with associated rural-urban migration. It is therefore not uncommon for many to live in squatter settlements where overcrowding, poor accommodation, lack of basic amenities and poor environmental conditions facilitate the widespread occurrence of enteric and respiratory infections.[10]

Dengue fever/dengue haemorrhagic fever is largely an urban disease of fairly recent occurrence, being spread by *Aedes aegypti* that breeds in tins and containers that are indiscriminately scattered around by man, clearly related to behaviour patterns of the latter.[10] Malaria has to be watched carefully as several countries which brought the occurrence of malaria cases down to low levels are now experiencing a resurgence of this disease. It has been suggested that rural areas in the tropics have remained unchanged in many ways, and the sleeping habits and housing situation of the population of such areas still favours man-mosquito contact.[11] It has been recommended that to

meet the challenge of malaria, efforts have to be made to control epidemics, train workers, and conduct research.[11]

Despite a decline in cholera cases around the world, there has been little change in the number of countries that have been affected, Malaysia being one of these.[11] New knowledge resulting from extensive clinical, epidemiological and bacteriological studies have had a considerable influence on the current attitude of the health authorities and of the public towards cholera and on the practices in diagnosis and control. There appears to be less panic and less tendency to impose severe restrictions on traffic and trade.[11] However due to slow progress in the improvement of water supply and excreta disposal, cholera and other diarrhoeal diseases continue to spread, or appear as epidemics. It is true that even as we enter the 90s, not all our people in Malaysia have access to safe water supplies and or a satisfactory means of excreta disposal.[7] This is further compounded by the fact that no significant advances have been made in immunological control.[11] On the other hand, knowledge on oral rehydration therapy has been valuable in the treatment of dehydration due to almost all acute diarrhoeas, including cholera.[7] This cost-effective measure has provided hope to millions of children globally and in Malaysia who live in areas where diarrhoeal diseases and cholera are endemic.[7,11] There is a need for continuous education of health workers and the community about the value of oral rehydration therapy and to encourage them to accept and promote its use. Further, an inter-disciplinary approach centered upon primary health care, and involving activities in the field of water supply and excreta disposal, communicable diseases, maternal and child health, nutrition and health education, needs to be undertaken to reduce the problem of diarrhoeal diseases.[11]

Globally, the tuberculosis situation is changing slowly due to problems associated with the specific epidemiological dynamics of the disease and also the difficulties faced by many countries in the application of the available control techniques.[11] Could these factors be applicable to Malaysia since the decline in occurrence of cases has slowed down? It has been noted that while mortality from tuberculosis can be lowered almost immediately by an effective treatment programme, the impact on morbidity can only be noticed in subsequent years. This retarded impact is usually observed with B.C.G. vaccination programmes.[11] Our national control programme against tuberculosis has had its impact. However in order to push the current prevalence rates of tuberculosis lower, even greater efforts will be required to identify and overcome the factors that have been impeding their decline. Community participation and health education will also play an important role in this.

It has been estimated that globally, some five million deaths due to diseases of childhood preventable by immunization occur among children under five years of age. As with diarrhoeal and respiratory diseases, these deaths occur in the context of severe malnutrition and interacting diseases.[10] Measles, diphtheria and pertussis can be leading killers especially among unimmunised children. Poliomyelitis can result in paralysis in 1–2% of unimmunised children under the age of three years, and in a higher proportion among older children who are infected. According to the World Health Organization, an increase in the number of cases of paralytic poliomyelitis has been reported.[11] Vigilance in ensuring adequate coverage of children with immunizations for diphtheria, pertussis, tetanus, measles, poliomyelitis and tuberculosis is important. Ensuring that the required schedule of immunization is completed is also equally important. At the same time pockets of unimmunised children in the community should be looked for and identified continuously to prevent these diseases from occurring from time to time or as outbreaks.

Food borne diseases can be expected to continuously occur,[4] especially since there have been increases in the risk factors associated with poor food hygiene, and increases in the incidence of

zoonoses.[11] This trend has been due to increases in human populations and in the numbers of animals in contact with man; urbanisation and environmental pollution; the inadequate health measures taken by uncoordinated veterinary and public health services; changing patterns of land use and agricultural practices; industrialization of food production; evolution of consumer habits in greater use of processed foods; an increase in the national and international trade in foods and feeds; and the development of tourism.[11] Most of these factors are relevant to Malaysia and these have to be addressed if any impact has to be made in food borne diseases. We have to expect that in the future, the increasing populations of man, livestock, pet animals, and man-associated wildlife will cause an exponential increase in zoonotic and foodborne diseases in rural and urban areas. Public health and veterinary services will have to work closely if any meaningful impact is to be made on this problem.

The increasing occurrence of sexually transmitted diseases along with the occurrence of resistance of gonococcal strains to penicillin and other antibiotics have important implications on costs of treatment.[11] Measures will have to be taken to prevent the misuse of anitbiotics. The underreporting of cases, and inadequacies in contact tracing and case investigations have to be overcome for these factors make controlling of this category of communicable diseases difficult. The emergence of AIDS has turned considerable public attention to it and sexually transmitted diseases indirectly. This has important implications for public health activities that are being directed towards modifying behaviour patterns and towards handling culturally sensitive issues relating to sexually transmitted diseases. Efforts directed at AIDS can have an impact on sexually transmitted diseases as a whole and should be taken advantage of if an impact is to be made.

Finally, acute respiratory diseases, which are a leading cause of morbidity in the community need attention. Mortality rates due to acute respiratory infections are highest in infants, declining in childhood and early adult life, but increasing progressively with age in the middle and old age groups.[11] In Malaysia, more needs to be done to understand this group of diseases and the factors that are associated with them so that control measures directed at them are effective.

Conclusion

It is clear that communicable diseases will continue to cause morbidity in Malaysia. The responsibility for their control has largely been that of the Ministry of Health which is putting in considerable efforts to keep these diseases under control.[12] Epidemiologists in all developing countries will continue to be challenged by communicable diseases so long as these diseases remain endemic and cause outbreaks every now and then.[9] Added to the problem is that subclinical infections of communicable diseases are common, and milder forms of some may mimic other disease conditions.[4]

Numerous obstacles however confront those who develop and implement effective and sustained communicable diseases control programmes in developing countries. These obstacles, which are also common to Malaysia include limited funds, supplies, equipments, facilities and trained personnel.[9] Transport and communication problems associated with poor terrains, especially common in Sabah, Sarawak and parts of Peninsular Malaysia, can give rise to logistic problems.[13] Accurate surveillance information with the relevant demographic information to enable rates to be computed are essential to monitor communicable diseaeses and take early action when outbreaks are impending. The provision of public health laboratories to support public health investigations and programmes will be useful.[13] Regular in-service training activities for public health personnel on the epidemiology of communicable diseases and current approaches to their control is essential.[8] Equally vital is the need for proper management and supervision of control programmes at all levels. Collaboration between agencies, be they governmental, non-

governmental or private, must be promoted for a greater impact on communicable diseases. The cooperation and participation of the community must be enhanced through health education to ensure that control measures are implemented, the environment is kept clean, and personal hygiene is practised. Research into communicable diseases and their control must continue too.

Many of the measures, mentioned in the previous paragraph, if already in operation, should be strengthened further. Those not implemented need to be considered in the planning process. Obstacles such as limited resources may not be that easily overcome and will pose difficulties especially since Malaysia like many other developing countries is faced with a dual problem of communicable and non-communicable diseases. In 1988 the percentage of the Gross National Product that was allocated to health was 1.7% and the allocation to the health budget was 4.4% of the total national budget. Of the latter only 22.5% is for the public health services.[5,6] Unless these allocations are increased, the extent of the efforts directed against communicable diseases may not increase significantly for the present, and innovative methods to address the problem need to be thought of.

It must be emphasised that the continuous efforts directed at controlling communicable diseases have to be maintained for they cannot be abandoned until the causative organisms have been eradicated from the whole world.[4] The public, and perhaps even governments, may become blase about a disease that nobody has seen for years and seems to pose no threat. However rapid intercontinental travel has transformed the world into a single epidemiological unit and, as long as a single pocket of endemic infection remains anywhere on earth, the risk is real that the disease in question will one day be reintroduced, even if it has been eradicated from our country.[4]

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