

A COMPARISON OF MORBIDITY PATTERNS IN PENINSULAR MALAYSIA 1959 AND 1974

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INTRODUCTION

With increasing expansion of medical and health systems in Malaysia in recent years, there has been a simultaneous increase in the demand for patient care services. Admissions in government hospitals and other governmental facilities increased from 40.1 per 1000 population in 1955 to 61.6 per 1000 population in 1975. In 1955, outpatient attendances in the same facilities were 730 per 1000 population while in 1975 this had increased to 1,164 per 1000 population (Malaysia, 1978). It is possible that accompanying this increase in utilisation of government facilities, changes in the patterns of disease seen at these facilities may have occurred.

Morbidity statistics on outpatients and inpatients though available are often too heterogenous to allow detailed analysis (Webber, 1965). Further a study on the patterns of diseases in governmental facilities may never give a true or complete picture of the disease problems that exist in the population. This becomes a greater limitation if one is to compare data at different time periods to look for changing disease patterns. Nevertheless, in the proper planning, implementation and evaluation of health services, it is important for health administrators to have an insight into the morbidity patterns existing as well as any changes that may have occurred over time (Rao and Puri, 1973).

BACKGROUND

Government medical services in Peninsular Malaysia formerly known as Malaya started in large

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towns around 1880. Expansion of the services took place between 1910 and 1940 with building of hospitals (Malaya, 1951). Following the second world war, five year development plans were instituted, which enabled the extension of medical services to the rural areas. During the first of these from 1956 to 1960, high priority was given towards rural health development and though the latter achieved only 25% of its targets, the subsequent five year plans saw the expansion of the rural health services.

Currently, there is at least one general hospital in every state and there are district hospitals serving the different districts within each state, both providing outpatient and inpatient care. The rural health system is a three tier system comprising of main health centres, health sub centres, and midwife clinics (Jayesuria, 1967). Some of the midwife clinics are presently being upgraded to *Klinik Desa*, to be run by community nurses, as a result of a shift from the three tier system to a two tier system. The shift also involves the upgrading of health subcentres to main health centres. The rural health system provides for outpatient care through the main health centre, health subcentre, *Klinik Desa* as well as through mobile dispensaries. The latter covers remote areas where the physical facilities have not been set up and includes off-shore islands and villages in the deep interior of the country.

Morbidity data is routinely collected by the hospitals and rural health system and is sent up to the Ministry of Health. At the Ministry, the Medical Records and Health Services unit is concerned with collecting and handling morbidity data relating to outpatients and inpatients in the health care delivery system while the Health Information Unit in the Health Division is responsible for collecting epidemiological data on communicable diseases (SEAMIC, 1979).

METHODS

Data on diseases among outpatients seen by static and travelling dispensaries as well as among hospital inpatients for Peninsular Malaysia was

obtained for the years 1959 and 1974. The years 1959 and 1974 were chosen due to the availability of data and in addition, in both years, the return form used for the diseases was the "Intermediate List of 150 causes for Tabulation of Morbidity and Mortality" as published in the "Manual of the International Statistical Classification of Diseases, Injuries and Causes of Death", seventh revision.

In the analysis of the data, disease categories among outpatients were looked at separately for static and travelling dispensaries as well as both combined together. As for hospital inpatients, disease categories for hospital admissions as well as causes of death for hospital admissions were examined. The same analysis was done for both 1959 and 1974. To illustrate, for outpatients seen by static dispensaries, the total number of cases seen under each disease category or cause group, for example, infective and parasitic diseases, was obtained. This total for each cause group was then expressed as a percentage out of the total cases seen over all cause groups. The cause groups were then ranked in order

of relative importance for both the years under consideration. Some of the uses and limitations of the type of morbidity data being considered is discussed in the section on discussion.

OBSERVATIONS

Outpatients (Static and Travelling Dispensaries)

Outpatients are seen at static outpatient departments and by the mobile travelling services. A comparison of data between 1959 and 1974 revealed that the patients presented with respiratory diseases most commonly in both the years (Table I). The next most common presentation in both years was the category of diseases of the skin, cellular tissue, bones and organs of movement, while accidents, poisonings, and violence which ranked sixth in 1959 had shifted up to become the third leading category to be seen in 1974. Diseases of the digestive system and diseases of the nervous system and sense organs occupied fourth and fifth positions respectively in both 1959 and 1974. Of interest was the observation that the category infective and parasitic diseases, which was

Table I
Percentage distribution of outpatients by disease categories seen by static and travelling dispensaries, Peninsular Malaysia, 1959 and 1974.

1959		1974	
1. Dis. of respiratory system	28.8%	1. Dis. of respiratory system	32.8%
2. Dis. of skin, cellular tissue, bones and organs of movement	16.0%	2. Dis. of skin, cellular tissue, bones and organs of movement	13.3%
3. Infective and parasitic dis.	13.5%	3. Accidents, poisonings, violence	11.8%
4. Dis. of digestive system	11.4%	4. Dis. of digestive system	11.3%
5. Dis. of nervous system and sense organs	9.2%	5. Dis. of nervous system and sense organs	10.6%
6. Accidents, poisonings, violence	7.8%	6. Infective and parasitic dis.	9.5%
7. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	6.4%	7. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	6.2%
8. Symptoms, senility, ill defined conditions	3.9%	8. Dis. of genito-urinary system	2.0%
9. Dis. of genito-urinary system	1.1%	9. Dis. of circulatory system	1.1%
10. Deliveries, complications of pregnancy, childbirth and puerperium	1.0%	10. Symptoms, senility, ill defined conditions	0.6%
Others	0.9%	Others	0.8%
All diseases	100.0%	All diseases	100.0%

the third leading problem seen in 1959, had shifted down in relative importance to sixth position in 1974. Of the remaining, there was a reduction in the category symptoms, senility and ill defined conditions in 1974 compared to 1959.

Outpatients (Travelling Dispensaries)

The relative positions of diseases commonly seen by the travelling dispensaries had not changed between 1959 and 1974 (Table III). The order in which the disease categories occurred were, respiratory diseases; infective and parasitic diseases; diseases of the skin, cellular tissue, bones and organs of the movement; diseases of the digestive system; diseases of nervous system and sense organs; allergic, endocrine, metabolic, nutritional, and blood diseases; accidents, poisonings and violence, and symptoms, senility and ill defined conditions. Travelling dispensaries thus continued to see infective and parasitic diseases quite commonly.

Outpatient (Static Dispensaries)

A look at the disease categories seen in static outpatient departments during 1959 and 1974 showed that respiratory diseases were the most frequently seen (Table II). There was an upward shift of accidents, poisonings, and violence from sixth position in 1959 to second position in 1974 while a shift downwards was observed for infective and parasitic diseases from fourth position in 1959 to sixth position in 1974. A reduction in the diagnosis of the category symptoms, senility and ill defined condition was observed in 1974. Other disease categories had not changed markedly in relative importance.

Hospital Admissions

Among admissions to hospitals in Peninsular Malaysia, deliveries and complications of pregnancy, childbirth and puerperium was the leading cause in both 1959 and 1974 (Table IV). The next four categories in 1974, namely, accidents, poisonings

Table II
**Percentage distribution of outpatients by disease categories seen
at static dispensaries, Peninsular Malaysia, 1959 and 1974**

1959	1974
1. Dis. of the respiratory system	30.5%
2. Dis. of the skin, cellular tissue, bones and organs of movement	15.2%
3. Dis. of the digestive system	11.6%
4. Infective and parasitic dis.	11.1%
5. Dis. of the nervous system and sense organs	9.1%
6. Accidents, poisonings and violence	8.9%
7. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	6.1%
8. Symptoms, senility and ill defined conditions	3.8%
9. Dis. of genito-urinary system	1.4%
10. Deliveries, complications of pregnancy, childbirth and puerperium	1.2%
Others	1.1%
All diseases	100.0%
	1. Dis. of the respiratory system
	33.7%
	2. Accidents, poisonings, and violence
	13.0%
	3. Dis. of skin, cellular tissues, bones and organs of movement
	12.6%
	4. Dis. of digestive system
	11.6%
	5. Dis. of the nervous system and sense organs
	10.9%
	6. Infective and parasitic dis.
	7.7%
	7. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs
	6.1%
	8. Dis. of genito-urinary system
	2.2%
	9. Dis. of circulatory system
	1.2%
	10. Deliveries, complications of pregnancy, childbirth and puerperium
	0.6%
	Others
	0.4%
	All diseases
	100.0%

Table III
**Percentage distribution of outpatients by disease categories seen by travelling
 dispensaries, Peninsular Malaysia, 1959 and 1974**

	1959		1974
1. Dis. of respiratory system	24.5%	1. Dis. of respiratory system	27.3%
2. Infective and parasitic dis.	20.1%	2. Infective and parasitic dis.	20.1%
3. Dis. of skin, cellular tissue, bones and organs of movement	18.1%	3. Dis. of skin, cellular tissue, bones and organs of movement	17.0%
4. Dis. of digestive system	11.0%	4. Dis. of digestive system	9.6%
5. Dis. of nervous system and organs	10.0%	5. Dis. of nervous system and organs	8.9%
6. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	7.1%	6. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	7.2%
7. Accidents, poisonings, violence	4.8%	7. Accidents, poisonings, violence	4.5%
8. Symptoms, senility, ill defined conditions	3.8%	8. Symptoms, senility, ill defined conditions	4.4%
9. Deliveries, complications of pregnancy, childbirth and puerperium	0.3%	9. Dis. of genito-urinary system	0.7%
10. Dis. of genito-urinary system	0.2%	10. Dis. of circulatory system	0.2%
Others	0.1%	Others	0.1%
All diseases	100.0%	All diseases	100.0%

Table IV
Percentage distribution of admissions to hospitals by disease
categories, Peninsular Malaysia, 1959 and 1974

	1959		1974
1. Deliveries, complications of pregnancy, childbirth and puerperium	27.8%	1. Deliveries, complication of pregnancy, childbirth and puerperium	22.9%
2. Infective and parasitic diseases	10.9%	2. Accidents, poisonings, violence	14.2%
3. Accidents, poisonings, violence	9.9%	3. Dis. of digestive system	10.5%
4. Dis. of digestive system	9.8%	4. Symptoms, senility and ill defined conditions	8.5%
5. Symptoms, senility and ill defined conditions	8.3%	5. Dis. of respiratory system	8.2%
6. Dis. of respiratory system	7.7%	6. Infective and parasitic dis.	5.7%
7. Dis. of skin, cellular tissue, bones, and organs of movement	4.1%	7. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	5.3%
8. Dis. of genito-urinary system	4.1%	8. Dis. of genito-urinary system	5.1%
9. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	3.9%	9. Dis. of circulatory system	4.7%
10. Dis. of nervous system and sense organs	3.4%	10. Dis. of nervous system and sense organs	4.1%
Others	9.2%	Others	10.8%
All diseases	100.0%	All diseases	100.0%

Table V
**Percentage distribution of deaths among hospital admissions
 by disease categories, Peninsular Malaysia, 1959 and 1974**

	1959		1974
1. Infective and parasitic diseases	16.0%	1. Certain dis. of early infancy	17.4%
2. Dis. of digestive system	14.2%	2. Dis. of circulatory system	15.4%
3. Certain dis. of early infancy	13.6%	3. Neoplasms	14.5%
4. Dis. of circulatory system	11.3%	4. Accidents, poisonings, violence	10.0%
5. Dis. of respiratory system	10.6%	5. Dis. of respiratory system	8.4%
6. Dis. of nervous system and sense organs	6.4%	6. Infective and parasitic dis.	8.1%
7. Accidents, poisonings and violence	5.9%	7. Dis. of nervous system and sense organs	7.4%
8. Neoplasms	5.7%	8. Dis. of digestive system	7.3%
9. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	4.2%	9. Allergic, endocrine, metabolic, nutritional, blood, blood forming organs	3.2%
10. Symptoms, senility, ill defined conditions	4.2%	10. Symptoms, senility, ill defined conditions	2.8%
Others	7.9%	Others	5.5%
All diseases	100.0%	All diseases	100.0%

and violence; diseases of the digestive system; symptoms, senility and ill defined conditions; and diseases of the respiratory system, were each one position lower in 1959. Infective and parasitic diseases which was the second leading cause of admissions in 1959 had shifted down to sixth position in 1974 while the category allergic, endocrine, metabolic, nutritional, diseases of the blood and blood forming organs had moved up ninth position (1959) to seventh position (1974). Diseases of the circulatory system occupied the ninth position in 1974 compared to 11th position in 1959.

Hospital Deaths

Causes of death among inpatients in hospitals showed a considerable change in pattern between 1959 and 1974 (Table V). Diseases of early infancy which in 1959 was third in importance had, in 1974, become the leading cause of death and the second leading cause in 1974 was diseases of the circulatory system which in 1959 occupied fourth position. Neoplasms had climbed up from eighth position in 1959 to third position in 1974 and the category accidents, poisonings, and violence from seventh position in 1959 to fourth position in 1974. Diseases of the respiratory system remained unchanged as

the fifth leading cause of death while in sixth position during 1974 was infective and parasitic diseases which was the leading cause of death among hospital inpatients in 1959. Another category to drop in relative importance was diseases of the digestive system which fell from second place in 1959 to eighth place in 1974. The remaining causes changed negligibly between 1959 and 1974.

DISCUSSION

The health status of a population can only be assessed on the basis of available statistics. Morbidity information that exists is often surrounded with problems and this makes their analysis and comparisons difficult (Webber, 1965). Morbidity patterns vary from place to place and from time to time, and as old disease problems are mastered, new ones emerge. A continuous monitoring system is therefore necessary to detect changing disease patterns rapidly. The existing surveillance system in Malaysia is largely directed towards certain specific diseases, and hence, many a growing health or disease problem that does not come within the context of this surveillance system is likely to go unnoticed till it reaches alarming proportions.

Comparison of disease patterns at different points in time has to be viewed with caution. Classifications according to the International Classification of Diseases may change with decennial revisions, but this did not pose a problem in the two years being compared, namely, 1959 and 1974, where the classification followed the seventh revision of the International Classification of Diseases. Other variables that affect interpretations of the findings include, the changing capabilities of staff diagnosing the diseases; the training received by the person diagnosing as well as filling the relevant forms; increased availability of diagnostic facilities, particularly those directed towards existing problems that are considered to be more important than in the past; and changes in the environment as a result of changing ecological systems, changing lifestyles, and socio economic changes.

In comparing the patterns of diseases among outpatients seen at static dispensaries, in 1959 and 1974, an outstanding change that is observed is the downward shift in relative importance of the category infective and parasitic diseases. Part of this decline is due to decreases in the occurrence of specific diseases within this category such as malaria, dysentries, and tuberculosis as a result of improvements in socio economic conditions and the environment as well as control or eradication programmes that have been instituted. However the majority of the other diseases in this category have declined only slightly indicating that the marked decline in the infective and parasitic diseases is not as large as it appears to be. It must also be borne in mind that this category of diseases had numerous diseases that require diagnostic laboratory facilities and it is possible that many of them may not be diagnosed especially those diseases that are seen in the rural areas. Further, other disease categories have grown to be bigger problems, such as accidents, which therefore tend to displace categories that have shown little change.

The category accidents, poisonings, and violence on the other hand has increased in relative importance in 1974 compared to 1959, and a closer look at the causes within this category revealed that much of the increase was singly due to motor vehicle accidents, which in absolute frequency increased from 6858 in 1959 to 40,337 in 1974. This increase in motor vehicle accidents keeps pace with the increase in vehicle registrations. Recent figures show that the increase in the number of vehicles on the road com-

pared with 1970 has risen from 9.1% in 1971 to 89.3% in 1975. In Peninsular Malaysia, there were an average of 132 automobile accidents, 47 persons injured and six killed each day (Silva, J.F., 1978). Accidents are an increasing problem that need to be recognised and prevented rapidly.

Respiratory diseases continue to dominate the disease problems among the outpatients seen by both static and travelling dispensaries, the major diagnoses in this category being upper respiratory tract infections and bronchitis. The common occurrence of these diseases and their easy communicability contribute towards the high frequency with which they are seen.

Among admissions to hospitals too, a sharp decline in infective and parasitic diseases and an upward climb in accidents, poisoning and violence was observed and the possible reasons for these changes has been suggested already. With advances in management and treatment many disease problems that caused death among hospital admissions in 1959 have declined in importance in 1974 as leading killers among hospital admissions, and these include infective and parasitic diseases and diseases of the digestive system. Among the infective and parasitic diseases, tuberculosis, diphtheria and tetanus which claimed many lives in 1959 have declined in 1974, while for diseases of the digestive system, deaths due to gastroenteritis and peritonitis have declined. However much of the decline observed is relative as other less preventable problems such as diseases of early infancy, diseases of the circulatory system, neoplasms and accidents have come to the fore in 1974. The increases in these latter categories are not surprising, with the increases in the population through more births and less deaths, as well as increased expectation of life in 1974 compared to 1959.

The general conclusions that can be reached on the data in 1959 and 1974 is that little change is observed in the disease patterns with which outpatients present themselves to travelling dispensaries, while on the other hand, both at static dispensaries and among hospital admissions infective and parasitic diseases have declined in relative importance. This does not in any way suggest that we have mastered this category of diseases as the specific diseases within this category show only slight declines. The fall in infective and parasitic diseases has further been magnified by the remarkable leap to the fore by accidents, in particular motor vehicle accidents,

which has to be viewed as a growing public health problem. While outpatients and hospital admissions show only the few changes identified above, deaths among hospitals admissions show marked changes. Undoubtedly deaths in the hospital are not a true reflection of mortality pattern in the community and population as only about a third of deaths in Peninsular Malaysia are medically certified or inspected. Nevertheless to hospital administrators, a knowledge of the types of admissions that are likely to lead to death will enable them to plan an effective casualty department and improved inpatient management of these disease problems through the provision of adequate and relevant resources.

SUMMARY

Disease patterns among outpatients seen at static and travelling dispensaries, as well as among hospital admissions and hospital deaths are compared between 1959 and 1974. While disease patterns of patients seen by travelling dispensaries show no change, patients seen by static dispensaries and hospital admissions in 1974 show a marked relative decline in infective and parasitic diseases and an increase in accidents, poisonings and violence. Causes of death in

hospitals in 1974 were different, there being relative increases in diseases of early infancy, diseases of circulatory system, neoplasms, and accidents, poisonings, violence while infective and parasitic diseases and diseases of the digestive system declined.

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