

CHAPTER II

Trend and Burden of Communicable Diseases Mortality in Thailand

2.1 Introduction

Thailand is a country that has been achieving its economic goals in the 1990's. Better economy enhanced good health care delivery system and provisions for basic requirements of human life, i.e better quality of food, shelter, water supply and sanitation etc.

Therefore, Communicable Diseases (CDs), which are closely related to poverty, declined in the country. Some childhood diseases known as vaccine preventable were set at very low level by extensive immunization programs.

However, prevalence data of the Ministry of Public Health revealed that some communicable diseases have been increasing in number in recent years. However, these increases in number of prevalence cases do not mean directly an increase in mortality, especially in non-communicable diseases(NCDs), but it is important for the community.

In some NCDs, there may be no mortality like cataract and deafness but in some CDs like rabies and AIDS, there can be 100% mortality.

Also, in communicable diseases, high prevalence is the warning sign for certain segments of populations. For instance, a sudden increase in influenza cases in the community means an epidemic outbreak and, if it was true,

introduction of a new strain in that particular area. This can bring a high toll of deaths in the very young and old age groups. (Park & Park, 1991)

Unusual opportunistic infections in the community indicate the introduction of new virulent disease and from that point we can investigate what is happening around us. (e.g., HIV infection).

Along with an improving economy in the country, demographic transition took place (Jamison, 1994). There is a shifting of major population groups and some senility and malignant diseases are becoming more common. The decline in some CDs and increasing numbers of some NCDs has put emphasis on non-communicable ones. However, global distribution of deaths by communicable diseases still ranks in the first position (WHO, 1995).

Since communicable diseases are still in an important position and cause-specific data are reliable to a certain extent, the aim of this paper is to find out communicable disease trends and analyze the deaths due to them. Literature review revealed that some communicable diseases have a tendency to fluctuate and more and more new infectious diseases are being identified in many developed and developing countries, (Hughes, 1995) which called for the initiation of this task.

2.2 Why Mortality Data are still in use

According to Prohmmo and Guest, (1994), data from registration of deaths, including the number, timing and cause of death, are still essential in monitoring the health situation of the Thai population.

Haculinen, Hansluwka, Lopez, and Naikada(1986) said that "statistics on causes of death are important and widely used for a number of purposes. They may be employed in explaining trends and differentials in overall mortality, in deciding on priorities for health and the allocation of resources, in designing intervention programs, and in the assessment and monitoring of public health problems and programs." Therefore, we can not neglect the role of mortality data in health system management. Although we have new indicators like Disability Adjusted Life Years (DALYs), they are not applicable in every country.(added emphasis)

2.3 Prevalence of Community Diseases in 1987 and 1993

Like many developing countries, Thailand has come across the era of communicable diseases. Although general burden of infectious diseases declined noticeably from 1987 to 1993 (MOPH, 1995) some specific infections like HIV leading to AIDS and its counterparts for example, herpes virus infection(due to immuno-deficiency), increased in recent years. Table 1 denotes prevalence of some infectious diseases in 1993 compared with 1987.

Table 1. Comparison of Prevalence of some Infectious Diseases in 1987 and 1993

Sr.	Diseases	1987	1993
1.	Acute Diarrhea	645902	874260
2.	Food Poisoning	104058	225795
3.	Herpes zoster infection	47	*411
4.	Tuberculosis	21440	**21061
5.	Scrub typhus	659	1367
6.	Conjunctivitis ^a	120044	108558
7.	Pneumonia	105531	133172
8.	Meningitis (total)	792	1596
9.	Poliomyelitis	21	28
10.	Rubella ^b	4649	3472
11.	Chicken Pox	27776	40258
12.	Mumps	10856	14564
13.	Other and unspecified	3674	10937

Source : Epidemiological surveillance booklet, 1987 and 1993 .MOPH

Table 1. shows increases in number of CDs cases in compare with seven years back. Some diseases^{a,b} show increase in number of cases in all age groups except 0-4 age group. Some diseases^{*} show marked increase in number only in 15-44 (active, working) age group.

2.4 Trend of Mortality due to Communicable Diseases

To estimate the trend, cause-specific mortality due to communicable diseases in same ICD revision were analyzed. Latest and earliest available data for ICD 9th revision were found to be 1987 and 1993 respectively. Trend is calculated by linear regression(r) to estimate the present status.

Yearly cause specific mortality data are described in Table 2.

Table 2. Yearly Mortality due to Communicable Diseases (1987 to 1993 ,ICD 9th Revision)

Cause group	1987	1988	1989	1990	1991	1992	1993
1.Intestinal inf Diseases	2612	1998	1658	1569	1442	1385	1432
2.Tuberculosis	5471	4495	4218	3937	3663	3595	*3514
3.Other bacteri- rial Diseases	4222	3625	3700	3762	4383	4570	5288
4.Viral D/s	2277	822	858	926	593	452	559
5.Rickettsioses and other ar- thropod D/s	1635	1464	1387	1292	1181	1055	1024
6.Venereal D/s	16	28	21	9	8	11	6
7.Others	662	862	1147	1013	855	947	1009
Total	16895	13294	12989	12508	12125	12015	12832
% of Grand Total Deaths	7.25	5.75	5.27	4.95	4.59	4.36	4.49

Source: Health Statistics, 1987 to 1993. MOPH.

Table 2 shows that mortality due to communicable disease groups have decreased year by year. Trend of overall CDs' mortality is downward (linear regression LR= -0.895). But for tuberculosis, a higher case fatality rate was found among 15-44 years age group. Also in 1993, some disease groups showed a tendency to rise again especially in certain age groups (refer to table 1). Therefore, close monitoring is mandatory for successive years.

2.5 Burden of Tuberculosis in Thai Community

In this paper, burden of a common communicable disease is measured by Potential Years of Life Lost (PYLL). PYLL is defined as the number of potential years of life lost by each death occurring before a predetermined end point. It is used as an alternative approach to measuring effectiveness

of intervention since it has medium applicability and very low in cost of calculating it. It is regularly used by the Center for Disease Control to assess burden of disease in the United States (CDC, 1986).

The joint paper developed by Mac Kinney and Baker(1993) emphasized the importance of using international comparisons, and the use of years of life lost analysis to highlight the importance of the particular problem as a public health issue. Here tuberculosis is selected to represent communicable diseases since it is the very common infectious disease in Thai community.

With increasing number of Acquired Immune Deficiency Syndrome(AIDS), more and more cases of tuberculosis were detected in adult population. Sometimes, presence of unusual form of tuberculosis infection in an individual alone is justifiable for HIV testing.

According to Narain, Raviglione and Kochi (1991), "In countries where both infections are common, the HIV sero-prevalence among tuberculosis patients is several fold higher than that found among the general population." (added emphasis) Therefore, persons with tuberculosis and past history of sexual promiscuity or other high risk behaviors in this country should be properly screened out if they present with unusual form of tuberculosis.

Kumaresan, Raviglione and Murray described Koch(1882) "If the number of victims which a disease claims is the measure of its significance, then all diseases, particularly the most dreaded infectious diseases, such as bubonic

plague, Asiatic cholera, etc., must rank far behind tuberculosis." This is due to the natural history of the disease, incomplete and improper taking treatment are common. These lead to high treatment failure rates and development of resistant strains of bacteria. This exists as a vicious cycle. Though it is a century since the first tuberculosis case was identified, it is still threatening people in the world along with HIV infection.

2.6 Methodology

PYLL is calculated from the number of deaths in each age group multiplied by the years of life lost from the pre-designated end-point set at age 67(66.6) years for males and 72(71.7) years for female to give an age specific PYLL (CDC, 1986). Finally, the age specific PYLLs' were summed to give a total PYLL for tuberculosis. Table 3 describes PYLL, in different years, for tuberculosis.

Table 3. Potential Years of Life Lost due to Tuberculosis (1987-1993)

Year	1987	1988	1989	1990	1991	1992	1993
PYLL	198983	159067	146257	137402	127038	21266	117129

Trend(Linear Regression)LR = (r)= -0.926 (decreasing)

Table 3 depicts that overall burden of tuberculosis has decreased from 1987 to 1993. But from 1992, case specific mortality due to the tuberculosis in 15-45 years age group became greater than previous years (refer to table 2). This is parallel with increasing AIDS cases and HIV infection in

the population. It denotes that problem of tuberculosis can not be forgotten by looking at the decreasing trend. (i.e. $r = -.0926$). It can recur as an epidemic disease in successive years along with the AIDS epidemics.

2.7 Limitations

In this paper, although best available data from published papers are used for validity but in some places the researcher could not avoid to make some assumptions.

These are :-

1. Ill-defined cause group of death (it is about 45-50% of deaths) is uniformly distributed in populations of 1987 to 1993. (Due to time and logistic constraint).
2. Sex distribution in deaths due to tuberculosis is equal (In fact deaths due to pulmonary tuberculosis is higher in males).

2.8 Conclusion

Thailand, as a whole kingdom is in a state of the Health Transition. This comprises of demographic and epidemiological transition in which decline in both fertility and infections leads to a growth of old age group (along with the economic boom, improved medical and public health technology). Therefore, non-communicable diseases are more common in the community.

However, we must bear in mind that the ever emerging phenomena of new infectious diseases themselves and their accompanying infections are ever threatening our world. Even

in the developed countries infections like tuberculosis and some viral infections are now being re-introduced with HIV epidemics.

But now we know that our co-ordinated efforts can overcome those diseases. According to Kumaresan, Raviglione, and Murray (1994) "If we assumed that the currently available health interventions were fully utilized world wide, the tuberculosis burden would become much lower. In particular, mortality would be immediately affected.. ." Therefore, we just need to follow appropriate strategies.

It is also true for Thai community that prevention of HIV and other infections, using effective chemotherapy in treatment of tuberculosis and other infectious diseases will bring remarkable improvement in mortality rates due to communicable diseases.

So, prevalence of communicable diseases should be regularly monitored by efficient surveillance system. Regular diseases trend projection, and community morbidity and mortality surveys should be carried out in the country to know the real problem of communicable diseases.