



CHAPTER IV

RESULTS

This study implemented to compare the causes of death reported on the death certificate and causes of death investigated by physicians interviewing of decedents' relatives and medical records from hospital in Maejai District, Phayao Province, from October 1, 2000 through September 30, 2001, with a total of 250 decedents. The results were divided into 3 categories as,

- 4.1 General information of decedents and death information
- 4.2 Compare the differences of causes of death identified on the death certificate and causes of death diagnosed by physicians in accordance to the interview of the decedents' relatives and review of the decedents' medical records.
- 4.3 Analyze the correspondence between the causes of death specified on the death certificate and the causes of death diagnosed by the physicians based on the decedents' relatives and review of medical records.

4.1 General Information of Decedents and Death Information

The decedents were male 54.0%, and female 46.0%. The age group at death found the largest percentage at 30-34 years old at 13.31%, followed by 35-39 at 10.08%, and 25-29 at 10.08%, respectively, and the average age was 50.55 years. Farmer 58.26%, employee 16.54% and student 10.24%, As for treatment records before death, decedents were treated at government hospitals the most at 77.60%. Place of death, died at home 58.72%, and died at hospital only 37.21%. Time of death was from 08.01-16.00 as 41.28%. 00.01-08.00 as 30.23%, and 16.01-24.00 as 28.49% respectively. The cause of death found the most was natural causes at 94.40%. Death notifying persons found the most was children of decedents 37.21%. Persons who gave their opinion on the cause of death, was mostly physicians at 58.40%. As shown in Table 2.

Table 2: General feature of death and information of the deceased person in Maejai District, Phayao Province, From October 2000 through September 2001

Information	Number	Percentage
Sex		
Male	135	54.0
Female	115	46.0
Total	250	100.00
Age group		
0-4	2	0.81
5-9	4	1.61
10-14	3	1.21
15-19	5	2.02
20-24	9	3.63
25-29	25	10.08
30-34	33	13.31
35-39	25	10.08
40-44	12	4.84
45-49	11	4.44
50-54	11	4.44
55-59	9	3.63
60-64	12	4.84
65-69	22	8.87
70-74	20	8.06
75-79	19	7.66
80-84	11	4.44
85-89	7	2.82
90 up	8	3.23
Total	248	100.0
Unidentified	2	

Lowest age = 0 year, Highest age = 98 years, Average age = 50.55 years.

Table 2: General feature of death and information of the deceased person in Maejai District, Phayao Province, From October 2000 through September 2001 (Cont.)

Information	Number	Percentage
Occupation		
Farmer	74	58.26
Employee	21	16.54
Student, House wife	13	10.24
Trade	5	3.94
Be sponsored	5	3.94
Gardener	2	1.57
Teacher	1	0.79
Agriculturist	1	0.79
Service (Petrol Pump)	1	0.79
Car driver	1	0.79
Baby sitter	1	0.79
Toiler	1	0.79
Weaver	1	0.79
Total	127	100.0
Unidentified	123	
Pre-death treatment		
Public health clinic	20	8.00
Government hospital	194	77.60
Private hospital	10	4.00
Clinic	3	1.20
No treatment	23	9.20
Total	250	100.0

Lowest age = 0 year, Highest age = 98 years, Average age = 50.55 years.

Table 2: General feature of death and information of the deceased person in Maejai District, Phayao Province, From October 2000 through September 2001 (Cont.)

Information	Number	Percentage
Place of death		
Home	101	58.72
Hospital	64	37.21
Other	7	4.07
Total	172	100.0
Unidentified	78	
Time of death		
08.01-16.00	71	41.28
16.01-24.00	49	28.49
00.01-08.00	52	30.23
Total	172	100.0
Unidentified	78	
Feature of death		
Natural	236	94.40
Suicide	4	1.60
Accident	3	1.20
Murder	2	0.80
Unidentified	5	2.00
Total	250	100.0

Lowest age = 0 year, Highest age = 98 years, Average age = 50.55 years.

Table 2: General feature of death and information of the deceased person in Maejai District, Phayao Province, From October 2000 through September 2001 (Cont.)

Information	Number	Percentage
Notifier		
Kid	64	37.21
Relative	38	22.09
Brotherly	28	16.28
Grandchildren	10	5.81
Father	9	5.23
Spouse	9	5.23
Mother	4	2.33
Neighbor	3	1.74
Others	7	4.07
Total	172	100.0
Unidentified	78	
Commentator		
County Chief	104	41.60
Doctor	146	58.40
Total	250	100.0

Lowest age = 0 year, Highest age = 98 years, Average age = 50.55 years.

4.2. Comparing the Differences in Causes of Death Identified on the Death Certificate and Causes of Death Diagnosed by Physicians in Accordance with the Interview of the Decedents' Relatives and Review of Medical Records

Referring to the comparison on causes of death from the death certificate and causes of death diagnosed by the physicians' in accordance with interview of the decedents' relatives and review of medical records, categorized by disease coding ICD-10. The highest causes of death identified on the death certificate were diseases of the circulatory system (I00-I99) 39.83%, certain Infectious and parasitic diseases (A00-B99) 26.14%, neoplasm (C00-D48) 9.96%, while causes of death diagnosed by physicians found mostly certain Infectious and parasitic diseases (A00-B99) 40.40%, neoplasm (C00-D48) 15.20%, and diseases of the circulatory system (I00-I99) 11.60%, respectively, As shown in Table 3.

Referring to the comparison of causes of death from the death certificate and causes of death which physicians diagnosed from interviews of decedents' relatives and review of medical records categorized into each disease. The most common causes reported on the death certificate were heart attack 37.76%, AIDS 23.24%, and senility 9.13%, respectively, which were different from physicians' diagnosis, as found the most common causes of death were AIDS 37.60%, senility 7.60%, and acute renal failure 6.80%, as shown in Table 4.

Table 3: Comparing the causes of death from the death certificate with the causes of death from physicians' diagnosis in Maejai District, Phayao Province, from October, 2000 through September 2001

ICD-10 Diseases Code	Disease Group	The causes of death from death certificate		The causes of death from physician's diagnosis	
		number	%	number	%
A00-B99	Certain Infectious and parasitic diseases	63	26.14	101	40.40
C00-D48	Neoplasm's	24	9.96	38	15.20
E00-E99	Endocrine, nutritional and metabolic diseases	2	0.83	6	2.40
F00-F99	Mental and behavioral disorders	1	0.41	2	0.80
G00-G99	Diseases of the nervous system	1	0.41	1	0.40
I00-I99	Diseases of the circulatory system	96	39.83	29	11.60
J00-J99	Diseases of the respiratory system	10	4.15	18	7.20
K00-K99	Diseases of the digestive system	0	0.00	5	2.00
N00-N99	Diseases of the genitourinary system	12	4.98	17	6.80
R00-R99	Symptom, signs and abnormal clinical and laboratory findings, not elsewhere classified	22	9.13	19	7.60
S00-T98	Injury, poisoning and certain other consequences of external causes	2	0.83	4	1.60
V01-Y98	External causes of Morbidity and Mortality	8	3.32	10	4.00
Total		241	100.0	250	100.0
Unidentified		9		0	

Table 4: Comparing the first 10 causes of death from the death certificate with the causes of death from the physician's diagnosis in Maejai District, Phayao Province, from October 2000 through September 2001

Order	Causes of death from death certificate	number	%	Causes of death from physician's diagnosis	number	%
1	Heart attack	91	37.76	AIDS	94	37.60
2	AIDS	56	23.24	Senility	19	7.60
3	Senility	22	9.13	Acute renal failure	17	6.80
4	Acute renal failure	12	4.98	COPD	14	5.60
5	Malignant neoplasm of liver and infra hepatic bile ducts	7	2.90	Hypertension	12	4.80
6	COPD	6	2.49	Malignant neoplasm of bronchus and lung	9	3.60
7	Malignant neoplasm of bronchus and lung	5	2.07	Malignant neoplasm of liver and infra hepatic bile ducts	7	2.80
8	Malignant neoplasm of independent multiple sites	5	2.07	Complications and ill-defined descriptions of heart disease	6	2.40
9	Complications and ill-defined descriptions of heart disease	4	1.66	Insulin - Dependent diabetes mellitus	6	2.40
10	Diseases of the blood	3	1.24	Malignant neoplasm of gallbladder	4	1.60

The causes of death specified on the death certificate according to coding in ICD-10 and categorized into each disease. This finding showed certain infectious and parasitic diseases (A00-B99) was AIDS the most at 23.23%, Neoplasm (C00-D48) was Malignant neoplasm of anus and anal canal 2.9%, Diseases of the circulatory system (I00-I99) was Heart failure 37.7%, Diseases of the respiratory system (J00-J99) was Chronic obstructive pulmonary disease 2.4 %, Diseases of the genitourinary system (N00-N99) was Acute renal failure 4.9%, Symptoms, signs and abnormal and laboratory findings, not elsewhere classified (R00-R99) was Senility 9.1% , as shown in Table 5.

Table 5: Classified in diseases group code of ICD-10 from death certificate in Maejai District, Phayao Province, from October 2000 through September 2001

ICD-10 Code	Diseases group	Number	%
A00-B99	Certain infectious and parasitic diseases		
	1. AIDS	56	23.23
	2. Septicemia	4	1.6
	3. Lung tuberculosis	2	0.8
	4. Viral hepatitis	1	0.4
C00-D48	Neoplasm		
	1. Malignant neoplasm of anus and anal canal	7	2.9
	2. Malignant neoplasm of bronchus and lung	5	2
	3. Carcinoma in situ of breast	5	2
	4. Malignant neoplasm of colon	2	0.8
	5. Neoplasm's of uncertain or unknown behavior	5	2
E00-E90	Endocrine, nutritional and metabolic diseases		
	1. Diabetes mellitus	2	0.8
F00-F99	Mental and behavioral disorders		
	1. Mental retardation	1	0.4
G00-G99	Diseases of the nervous system		
	1. Epilepsy	1	0.4
I00-I99	Diseases of the circulatory system		
	1. Heart failure	91	37.7
	2. Hearth diseases that disindicated detail	4	1.6
	3. Complications and ill-defined descriptions of heart disease	1	0.4
J00-J99	Diseases of the respiratory system		
	1. Chronic obstructive pulmonary disease	6	2.4
	2. Respiratory failure	3	1.2
	3. Pulmonary edema	1	0.4

Table 5: Classified in diseases group code of ICD-10 from death certificate in Maejai District, Phayao Province, from October 2000 through September 2001 (Cont.)

ICD-10 Code	Diseases group	Number	%
N00-N99	Diseases of the genitourinary system 1. Acute renal failure	12	4.9
R00-R99	Symptoms, signs and abnormal and laboratory findings, not elsewhere classified 1. Senility	22	9.1
S00-T98	Injury, poisoning and certain other consequences of external causes 1. Toxic effect of alcohol	2	0.8
V01-Y98	External causes of morbidity and mortality 1. Handgun discharge 2. Intentional self-harm by hanging 3. Transport accidents 4. Intentional self-harm by handgun discharge 5. Accidental drowning and submersion	2 2 2 1 1	0.8 0.8 0.8 0.4 0.4
	Total	241	100

4.3 Analyze of the Correspondence of Causes of Death Specified on the Death Certificate and Causes of Death Diagnosed by Physicians Based on the Interview of the Decedents' Relatives and Review of Medical Records

Referring to the analysis of the consistency of causes of death specified on the death certificate and causes of death diagnosed by physicians is based on the interviews of decedents' relatives and review of medical records, and in accordant to disease groups ICD-10, found the consistency of causes of death 55.78% and statistical

consistency Kappa coefficient = 0.461 ($p < .01$), reflecting low agreement, as shown in Table 6.

Table 6: The consistency of causes of death from death certificate and causes of death from physician's diagnosis in ICD-10 in Maejai District, Phayao Province, from October 2000, through September 2001

Causes of death from death certificate	Causes of death from physician's diagnosis												
Certain infectious and parasitic diseases	59	0	0	0	0	36	4	0	0	2	0	0	101
Neoplasm's	0	23	0	0	0	10	0	1	0	2	0	0	36
Diseases of the blood and blood – forming organs and certain disorders involving the immune mechanism	0	0	2	0	0	2	1	1	0	0	0	0	6
Endocrine, nutritional and metabolic diseases	0	0	0	1	0	1	0	0	0	0	0	0	2
Diseases of the nervous system	0	0	0	0	1	0	0	0	0	0	0	0	1
Diseases of the circulatory system	0	0	0	0	0	23	1	0	0	3	0	0	27
Diseases of the respiratory system	2	0	0	0	0	9	4	0	0	2	0	0	17
Diseases of the digestive system	0	0	0	0	0	2	0	0	0	1	0	0	3
Diseases of the genitourinary system	2	1	0	0	0	2	0	10	1	1	0	0	17
Certain conditions originating in the preinstall period	0	0	0	0	0	8	0	0	0	11	0	0	19

Table 6: The consistency of causes of death from death certificate and causes of death from physician's diagnosis in ICD-10 in Maejai District, Phayao Province, from October 2000, through September 2001 (Cont.)

Cause of death from death certificate	Cause of death from physician's diagnosis												
	0	0	0	0	0	2	0	0	0	0	2	0	4
Symptoms, signs and abnormal clinical and laboratory findings , not elsewhere classified	0	0	0	0	0	2	0	0	0	0	2	0	4
Injury , poisoning and certain other consequences of external causes	0	0	0	0	0	1	0	0	0	0	0	8	9
Total	63	24	2	1	1	96	10	12	1	22	2	8	242

The total correct straight = $(135 * 100) / 242 = 55.78\%$. The consistency measured by Kappa coefficient = 0.461 ($p < 0.01$).