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GOVERNMENT OF KERALA

MEDICAL CERTIFICATION OF
CAUSES OF DEATH
1991

DEPARTMENT OF ECONOMICS & STATISTICS
THIRUVANANTHAPURAM



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P R E F A C E

The scheme "Medical Certification of Cause of death" is now in operation in the three city corporations of Thiruvananthapuram, Kochi and Kozhikode and in the two Municipalities of Kollam and Alappuzha.

The report dealing with mortality by causes occurred in the state during the year 1991 was prepared by the Vital Statistics Unit of this Department.

Thiruvananthapuram,
5-11--1993.

Dr.M.Kuttappan
Director of Economics & Statistics.

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Dr. M. Kullappan
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Thiruvananthapuram,
2-11-1952

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Introduction:

The reliable data on morbidity and mortality have an important role in Planning and implementation of various health improvement schemes. The data on cause of death, help to identify the occurrence of major diseases and thereby enable the planners and administrators to take preventive measures against these diseases. Statistics of cause of death is essential for the assessment of effectiveness of various health improvement activities.

The Scheme Medical Certification of cause of death was introduced in the State in 1969. The scheme, though with its inherent draw backs, provides leading guidelines to medical practitioners, social workers, policy formulators and others interested in the field.

This report deals with the analysis of cause of death in the three corporations of Thiruvananthapuram, Kochi and Kozhikode and in the municipalities of Kollam and Alappuzha during the year 1991.

1.1 Objectives

The main objectives of the scheme are the following

- (i) to obtain reliable information on the underlying causes of death.
- (ii) to pin point the leading causes of death for males and females.
- (iii) to identify individual causes of death in certain special groups such as infants mothers and aged persons.
- (iv) to study the mortality pattern of certain important diseases like heart disease, tuberculosis, Cancer etc.
- (v) To enable public health and medical authorities to undertake specific investigation and studies into the mortality pattern of diseases for the evaluation and planning of health activities.

1.2 Methodology

The scheme envisages the collection of relevant data relating to all deaths in the medical institutions within the three corporations and in two municipalities of Kollam and Alappuzha having facilities for inpatient treatment. It is the duty of the attending physicians to furnish the required details on cause of death in the form prescribed for it. The cause of death certificate collected from all the institutions are scrutinised and causes of death identified and coded by the Deputy Health Officer appointed for the purpose. For coding the cause of death, the list 'A' of the international classification of Diseases (IX Division) is adopted.

1.3 Cause of Death

Cause of death is defined as the morbid condition or disease process abnormality, injury or poisoning leading directly or indirectly to death. Every death is likely to have multiple causes and death accrues only as a result of a chain of causes.

In this report only the major causes of death which account for at least 3% deaths in only one or more centres are analysed in detail. The cause of death which are insignificant are grouped under others.

The following are found to be the major causes of death.

1. Heart diseases.
2. Accidents injuries and poisoning.
3. Cerebrovascular diseases.
4. Neoplasms.
5. Diseases of the digestive system.
6. Diseases of the respiratory system.
7. Condition originating in the perinatal period.
8. Nutritional and metabolic diseases and immunity dis-orders.

1.4 Limitation

The survey cover the three city corporations and two municipalities in the State. Hence the coverage is only a portion of total deaths when compared to the large number of deaths occurred in the municipalities and cities in the State having facilities for inpatient treatment. Therefore the indication on causes of death given in this report cannot be taken as a common evidence.

1.5

It is significant to note that heart disease was the most predominant cause of death in all the five centres and the percentage is higher among males than females. The cause of death reported in respect of the five centres are discussed below in detail.

(2) **Thiruvananthapuram Corporation**

As per 1991 Census, population of Thiruvananthapuram Corporation was 5.25 lakhs with an area of 75 sq.kms. The density of population of the city corporation was 7000 per sq.km. During the year under report the number of medical certification forms received and analysed were 4961 with male and female break up of 3002 and 1959 respectively (Annexure).

2.1 Kollam Municipality

The population of Kollam municipality was 1.40 lakhs as per 1991 census having an area of 18.48 Sq.Kms. The density of population per sq.km. was 7568. The number of medically certified causes received from this municipality was 1762. The male and female break up was 1131 and 631 respectively.

2.2 Alappuzha Municipality

According to 1991 census, the population of Alappuzha Municipality was 1.75 lakhs with an area of 47 Sq.Km. The density of population per Sq.Km. was 3723. The number of causes of death cards received from this municipality during the year under report were 1335 out of which 865 males 470 females.

2.3 Kochi Corporation

Kochi Corporation was formed in 1967. The density of population according to 1991 census was 5.65 lakhs having an area of 95 sq.km. The density of population per sq.km. was 5947. Total number of death cards on Medical Certification of causes of death verified and analysed were 3374 with male and females break-up of 2267 and 1107 respectively.

2.4 Kozhikode Corporation

The population of Kozhikode Corporation as per 1991 census was 4.2 lakhs. Area of the Corporation was 82.7 sq.km. The density of population per sq.km. was 5079. The number of causes of death certificate received and analysed were 4999 with male and female break-up of 3274 and 1725 respectively.

(3) Sex-wise distribution of the leading causes of death in the selected 5 centres

The details of analysis of the major causes of death as in appendix I is given below.

3.1 Heart diseases

Heart disease was the most predominant cause of death in all the five centres. Out of the total death, 32.84% of the death in Kochi Corporation was due to Heart disease with male and female break-up of 34.89% and 28.64% respectively. In the other four centres the percentage of death according to the rank was as follows. Alappuzha 26.97 (M-28.56, F-24.04) Kollam 26.33 (M-27.86, F-25.04), Kozhikode 21.78 (M-23.52, F-18.49) and in Thiruvananthapuram Corporation 15.45 (M-16.66, F-13.63) Death due to heart diseases recorded was highest in Kochi while Thiruvananthapuram recorded the lowest. In all the five centres the percentage is higher.

3.2 Accidents, injuries and poisoning

The percentage of death due to accidents injuries and poisoning was as follows during the year under report. Thiruvananthapuram 10.62, Kollam 5.51, Alappuzha 8.09, Kochi 9.78 and Kozhikode 7.94. The second major cause of death in Thiruvananthapuram Corporation was accidents injuries and poisoning. Among the five centres death due to this cause was the lowest in Kollam. The male and female share of death due to this cause was Thiruvananthapuram (M-12.06, F-6.94) Kollam (M-6.01, F-4.60), Alappuzha (M-7.75, F-8.72) Kochi (M-10.10, F-9.12), Kozhikode (M-8.28, F-7.30)

3.3 Cerebrovascular diseases

One of the major causes of death in all the three city corporation and in the two Municipalities was cerebrovascular diseases. The percentage share of deaths due to this disease was Thiruvananthapuram 9.26, Kollam 8.23, Alappuzha 7.79, Kochi 10.05 and Kozhikode 8.12. The male and female break-up in all the centres is as follows. Thiruvananthapuram (M-9.09, F-9.55%), Kollam (M-6.90%, F-10.62%), Alappuzha (M-8.09%, F-7.23%) Kochi (M-9.18%, F-11.83%), Kozhikode (M-8.49%, F-7.42%).

3.4 Neoplasms

The percentage of death due to Neoplasm was 9.15, 5.22, 4.34, 8.95 and 10.05 in Thiruvananthapuram, Kollam, Alappuzha, Kochi and Kozhikode respectively. The male-female break up in these centres are given below, Thiruvananthapuram (M-9.43, F-8.73), Kollam (M-5.84, F-4.12), Alappuzha (M-3.93, F-5.11) Kochi (M-8.03, F-10.84), Kozhikode (M-10.32, F-9.51). The second major killer in Kozhikode Corporation was also death due to neoplasm.

3.5 Diseases of the Digestive System

Death due to the disease of the digestive system was not negligible in all the five centres. The percentage share of death due to this disease with male and female break up is as follows. Thiruvananthapuram 8.75 (M-10.49, F-6.07) Kollam 5.39 (M-6.20, F-3.80), Alappuzha 6.59 (M-7.17, F-5.53), Kochi 4.21 (M-4.81, F-2.98) Kozhikode 6.02 (M-6.87, F-4.41)

3.6 Disease of the respiratory system

Percentage of deaths due to this disease was 11.35 in Kollam followed by Alappuzha (11.24), Kozhikode (8.86), Thiruvananthapuram (6.96) and Kochi 4.59. When compared to other centres percentage of deaths due to this disease was the highest in Kollam municipality and the lowest in Kochi Corporation. The percentage of male and female break up was as follows Thiruvananthapuram (M-6.66, F-7.45), Kollam (M-12.64, F-11.35), Alappuzha (M-12.02, F-9.79), Kochi (M-4.67, F-4.43) and Kozhikode (M-8.68, F-9.22).

3.7 Condition originating in the perinatal period

Percentage of deaths due to this disease was comparatively higher in Kozhikode Corporation during the year under report. The percentage of deaths with male and female break-up is as follows:- Thiruvananthapuram 6.35 (M-5.56, F-7.55), Kollam 7.49 (M-6.54, F-9.19), Alappuzha 3.67 (M-3.35, F-4.26) Kochi 5.01 (M-4.37, F-6.32) Kozhikode 9.88 (M-8.83, F-11.88)

3.8 Nutritional and metabolic diseases and Immunity disorders

Percentage of deaths due to Nutritional and metabolic disease and immunity disorders varies from 3.59 in Thiruvananthapuram Corporation to 6.02% in Kollam municipality. The percentage of deaths in the five centres selected for the survey was as follows. Thiruvananthapuram 3.59 (M-3.57, F-3.62) Kollam 6.02 (M-5.22, F-7.45) Alappuzha 4.42 (M-3.24, F-6.60), Kochi 5.99 (M-5.38, F-7.23) Kozhikode 4.00 (M-4.31, F-3.42)

3.9

Diseases such as intestinal infectious diseases, Tuberculosis, other bacterial diseases, diseases of the nervous system and sense organs, signs, symptoms of all ill defined conditions are other significant causes of deaths in these five centres under the scheme.

4.

Deaths according to age group - Annexure II
Agewise analysis of causes of death in the age group of below one year, 1-14, 15-44 and 45 and above is attempted below.

4.1 Below 1 year (Infants)

The highest percentage of deaths occurred in the age group of below 1 year was in Thiruvananthapuram Corporation (22.19) followed by Kozhikode-16.69, Kollam-13.05, Alappuzha 12.21 and Kochi 9.25. The major killer disease in this age group was conditions originating in the perinatal period followed by disease of the respiratory system, other bacterial disease and deaths due to heart diseases.

4.2 Age group 1-14

Percentage of deaths occurred in this age group was smaller when compared to the percentage of deaths in other age groups in all the five centres. The percentage share of deaths in the age group of 1 to 14 was as follows. Thiruvananthapuram-10.42, Kollam-4.03, Alappuzha-3.76, Kochi-3.20 and Kozhikode-8.14. The major killer diseases in this age group were disease of the respiratory system, viral diseases, diseases of the nervous system and sense organs, heart diseases, other bacterial diseases, Neoplasms intestinal infectious disease etc.

4.3 Age group 15 to 44

Deaths occurred in this age group were Thiruvananthapuram 22.44% Kollam 12.03%, Alappuzha 14%, Kochi 17.49% and in Kozhikode-19.98%. Accidents, injuries and poisoning act as the major killer item of diseases in this age group of 15 to 44. Other major killer diseases in this age group were heart disease, disease of the respiratory system, disease of the digestive system, disease of the nervous system and sense organs etc.

4.4 Forty five and above

Major portion of the deaths were occurred in this age group of 45 and above in all the 5 centres. The percentage of deaths in this age group was as follows: Thiruvananthapuram-45, Kollam-70.89, Alappuzha-70.03 Kochi-70.06, Kozhikode-55.19. In this age group heart disease was the major killer disease in all the five centres. The percentage of death due to Heart disease was as follows, Thiruvananthapuram-20.72, Kollam-32.43, Alappuzha-33.69, Kochi-38.92, Kozhikode-34.18. The other important disease found in this age group were Cerebrovascular diseases. Neoplasm, Disease of the respiratory system, accidents, injuries and poisoning.

5. Conclusion

As usual heart disease seemed to be the major cause of death especially in the age group of 45 and above and 14 to 44 in all the five centres. The proportion of deaths due to heart disease was higher in Kochi, Alappuzha and Kollam when compared to Thiruvananthapuram and Kozhikode. Another major cause of death in these centres was deaths due to cerebrovascular diseases. The condition originating in the perinatal period was due the important cause of infant deaths and this was highest in Kozhikode followed by Kollam and Kochi.

APPENDIX - I

Percentage of death due to major diseases in the five centres with male and female break-up at a glance

Sl.	Code No.	Major diseases	Thiruvananthapuram			Kollam			Alappuzha			Kochi			Kozhikode		
			M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.	VII 390-429	Heart diseases	16.66	13.63	15.45	27.06	25.04	26.33	28.56	24.04	26.97	34.89	28.64	32.84	23.52	18.49	21.78
2.	XVII 800-999	Accidents injuries and poisoning	12.96	6.94	10.62	6.01	4.60	5.51	7.75	8.72	8.09	10.10	9.12	9.78	8.28	7.30	7.94
3.	VIII 430-438	Cerebrovascular diseases	9.09	9.55	9.26	6.90	10.62	8.23	8.09	7.23	7.79	9.18	11.83	10.05	8.49	7.42	8.12
4.	II 140-239	Neoplasms	9.43	8.73	9.15	5.84	4.12	5.22	3.93	5.11	4.34	8.03	10.84	8.95	10.32	9.51	10.05
5.	IX 520-579	Diseases of the digestive system	10.49	6.07	8.75	6.28	3.80	5.39	7.27	5.53	6.59	4.81	2.98	4.21	6.87	4.41	6.02
6.	VIII 460-519	Diseases of the respiratory system	6.66	7.45	6.95	12.64	9.03	11.35	12.02	9.79	11.24	4.67	4.43	4.59	8.68	9.22	8.86
7.	XV 760-779	Conditions Originating in the perinatal period	5.56	7.55	6.35	6.54	9.19	7.49	3.35	4.26	3.67	4.37	6.32	5.01	8.83	11.88	9.88
8.	III 240-279	Nutritional and metabolic diseases and immunity disorders	3.57	3.62	3.59	5.22	7.45	6.02	3.24	6.60	4.42	5.38	7.23	5.99	4.31	3.42	4.00
		Percentage Total	74.42	63.54	70.13	76.49	73.85	75.54	74.11	71.28	73.11	81.43	81.39	81.42	79.30	71.65	76.65

APPENDIX - II

Deaths according to age group

Sl.No.	Age group	Thiruvananthapuram	Kollam	Alappuzha	Kochi	Kozhikode
		%	%	%	%	%
1	2	3	4	5	6	7
1.	Below 1 year	22.19	13.05	12.21	9.25	16.69
2.	1-14	10.42	4.03	3.76	3.20	8.14
3.	15-44	22.44	12.03	14.00	17.49	19.98
4.	45 and above	44.95	70.89	70.03	70.06	55.19
Total		100	100	100	100	100

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APPENDIX - III

Sex-wise Details of medically certified deaths in Thiruvananthapuram

Sl.	Code No.	Cause of death	Male	Percentage	Female	Percentage	Total	Percentage
1	2	3	4	5	6	7	8	9
1.	I (001-009)	Intestinal Infections diseases	48	1.60	45	2.30	93	1.87
2.	I (101-018)	Tuberculosis	35	1.17	20	1.02	55	1.11
3.	I (020-041)	Other bacterial diseases	162	5.40	135	6.89	297	5.99
4.	I (045-079)	Viral diseases	31	1.03	41	2.09	72	1.45
5.	II (140-239)	Neoplasms	283	9.43	171	8.73	454	9.15
6.	III(240-279)	Nutritional and metabolic diseases and immunity diseases	107	3.57	71	3.62	178	3.59
7.	VI (320-389)	Diseases of the nervous system and sense organs	132	4.40	135	6.89	267	5.38
8.	VII(390-429)	Heart diseases	500	16.66	267	13.63	767	15.45
9.	VII(436-438)	Cerebrovascular diseases	273	9.09	187	9.55	460	9.26
10.	VII(460-519)	Disease of the respiratory system	200	6.66	146	7.45	346	6.97
11.	IX(520-679)	Disease of the digestive system	315	10.49	119	6.07	434	8.75
12.	X (580-629)	Disease of the urinary system	83	2.76	51	2.61	134	2.70
13.	XV(760-779)	Conditions originating in the perinatal period	167	5.56	148	7.55	315	6.35
14.	XVI(780-799)	Signs, symptoms and ill defined conditions	95	3.16	77	3.94	172	3.47
15.	XVII(800-999)	Accidents, injuries & poisoning	389	12.96	136	6.94	525	10.62
		Others	182	6.06	210	10.72	392	7.90
		Total	3002	100	1959	100	4961	100

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APPENDIX - IV

Sex-wise Details of medically certified deaths in Kollam

Si. No.	Code No.	Causes of death	Male	Percentage	Female	Percentage	Total	Percentage
1	2	3	4	5	6	7	8	9
1.	I (001-009)	Intestinal infections diseases	32	2.83	25	3.96	57	3.23
2.	I (101-018)	Tuberculosis	37	3.27	19	3.01	56	3.10
3.	I (020-041)	Other bacterial diseases	27	2.39	14	2.22	41	2.33
4.	I (045-079)	Viral diseases	10	0.83	6	0.95	16	0.91
5.	II(140-235)	Neoplasms	66	5.84	26	4.12	92	5.22
6.	III(240-279)	Nutritional and metabolic diseases and immunity diseases	59	5.22	47	7.45	106	6.02
7.	VI(320-389)	Diseases of the nervous system and sense organs	49	4.33	46	7.25	55	5.39
8.	VIII(350-425)	Heart diseases	306	27.06	158	25.04	464	26.33
9.	VIII(430-535)	Cerebrovascular diseases	78	6.90	67	10.62	145	8.23
10.	VIII(460-519)	Disease of the respiratory system	143	12.64	57	9.03	200	11.35
11.	IX(520-679)	Disease of the digestive system	71	6.28	24	3.80	95	5.39
12.	X (580-629)	Disease of the urinary system	36	3.18	15	2.38	51	2.89
13.	XV(760-779)	Conditions originating in the perinatal period	74	6.54	58	9.19	1,32	7.49
14.	XVI(780-799)	Signs, Symptoms of ill defined conditions	42	3.71	17	2.69	59	3.35
15.	XVII(800-999)	Accidents, injuries & poisoning	68	6.01	29	4.60	97	5.51
		Others	33	2.92	23	3.65	56	3.18
		Total	1131	100.00	631	100.00	1762	100.00

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APPENDIX - V

Sex-wise Details of medically certified deaths in Alappuzha

Si. No.	Code No.	Causes of death	Male	Percentage	Female	Percentage	Total	Percentage
1	2	3	4	5	6	7	8	9
1.	I (001-009)	Intestinal infections diseases	33	3.82	27	5.74	60	4.49
2.	I (101-018)	Tuberculosis	44	5.09	12	2.55	56	4.20
3.	I (020-041)	Other bacterial diseases	32	3.70	23	4.89	55	4.12
4.	I (045-099)	Viral diseases	8	0.92	3	0.64	11	0.82
5.	II(146-239)	Neoplasms	34	3.93	24	5.11	58	4.34
6.	III(240-279)	Nutritional and Metabolic diseases and immunity diseases	28	3.24	31	6.60	59	4.42
7.	VI(320-389)	Diseases of the Nervous system and sense organs	40	4.62	29	6.17	69	5.17
8.	VII(370-429)	Heart diseases	247	28.56	113	24.04	360	26.97
9.	VII(430-438)	Cerebrovascular diseases	70	8.09	34	7.23	104	7.79
10.	VIII(460-519)	Disease of the respiratory system	104	12.02	46	9.79	150	11.24
11.	IX(520-675)	Disease of the digestive system	62	7.17	26	5.53	88	6.59
12.	X (580-629)	Disease of the urinary system	27	3.12	10	2.13	37	2.77
13.	XV(760-779)	Conditions originating in the perinatal period	29	3.35	20	4.26	49	3.67
14.	XVI(780-799)	Signs, symptoms of ill defined conditions	13	1.50	7	1.49	20	1.50
15.	XVII(800-999)	Accidents, Injuries & poisoning	67	7.75	41	8.72	108	8.09
16.		Others	27	3.12	24	5.11	51	3.82
		Total	865	100.00	470	100.00	1335	100.00

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APPENDIX - VI

Sex-wise Details of medically certified deaths in Kochi

Si. No.	Code No.	Causes of death	Male	Percentage	Female	Percentage	Total	Percentage
1	2	3	4	5	6	7	8	9
1.	I (001-009)	Intestinal infections diseases	26	1.15	18	1.63	44	1.30
2.	I (101-018)	Tuberculosis	142	6.26	31	2.80	173	5.13
3.	I (020-041)	Other bacterial diseases	50	2.21	31	2.80	81	2.41
4.	I(045-079)	Viral diseases	28	1.24	25	2.26	53	1.57
5.	II(140-239)	Neoplasms	182	8.03	120	10.84	302	8.95
6.	III(240-279)	Nutritional and metabolic disease and immunity diseases	122	5.38	80	7.23	202	5.99
7.	VI(320-369)	Diseases of the nervous system and sense organs	25	1.10	17	1.54	42	1.24
8.	VII(390-429)	Heart diseases	791	34.89	317	28.64	1108	32.84
9.	VII(430-438)	Cerebrovascular diseases	208	9.18	131	11.83	339	10.05
10.	VIII(460-519)	Disease of the respiratory system	106	4.67	49	4.43	155	4.59
11.	IX(520-679)	Disease of the digestive system	109	4.81	33	2.98	142	4.21
12.	X(580-629)	Disease of the urinary system	74	3.26	32	2.89	106	3.14
13.	XV(760-779)	Conditions originating in the perinatal period	99	4.37	70	6.32	169	5.01
14.	XVI(780-799)	Signs symptoms and ill defined conditions	16	0.71	9	0.81	25	0.74
15.	XVII(800-999)	Accidents, injuries & poisoning	229	10.10	101	9.12	330	9.78
		Others	60	2.64	43	3.88	103	3.05
		Total	2267	100	1107	100	3374	100

APPENDIX - VII

Sex-wise Details of medically certified deaths in Kozhikode

Si. No.	Code No.	Causes of death	Male	Percentage	Female	Percentage	Total	Percentage
1	2	3	4	5	6	7	8	9
1.	I (001-009)	Intestinal Infections diseases	101	3.08	88	5.10	189	3.78
2.	I (101-018)	Tuberculosis	129	3.94	47	2.72	176	3.52
3.	I (020-041)	Other bacterial diseases	124	3.79	83	4.81	207	4.14
4.	I (045-079)	Viral diseases	88	2.69	58	3.36	146	2.92
5.	II(140-239)	Neoplasms	338	10.32	164	9.51	502	10.05
6.	III(240-279)	Nutritional and metabolic diseases and immunity diseases	141	4.31	59	3.42	200	4.00
7.	VI(320-389)	Diseases of the nervous system and sense organs	74	2.26	75	4.35	149	2.99
8.	VII(390-429)	Heart diseases	770	23.52	319	18.49	1089	21.78
9.	VII(430-438)	Cerebrovascular diseases	278	8.49	128	7.42	406	8.12
10.	VIII(460-519)	Disease of the respiratory system	284	8.68	159	9.22	443	8.86
11.	IX(520-679)	Disease of the digestive system	225	6.87	76	4.41	301	6.02
23.	X (580-629)	Disease of the Urinary system	60	1.83	21	1.22	81	1.62
13.	XV(760-779)	Conditions originating in the perinatal period	289	8.83	205	11.88	494	9.88
14.	XVI(780-799)	Signs symptoms and ill defined conditions	6	0.18	4	0.23	10	0.20
15.	XVI(800-999)	Accidents injuries & poisoning	271	8.28	126	7.30	397	7.94
		Others	96	2.93	113	6.56	209	4.18
		Total	3274	100	1725	100	4999	100

APPENDIX VIII

**Statement showing the leading causes of death in 1991 according to age group
Thiruvananthapuram**

Sl. No.	Code No.	Cause of death	Below 1 year	%	1-14	%	15-44	%	45 & above	%	Total	%
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	I (001-009)	Intestinal infection diseases	30	2.72	22	4.26	11	0.99	30	1.35	93	1.87
2.	I (010-018)	Tuberculosis	10	1.20	10	1.93	15	1.35	30	1.35	55	1.11
3.	I (020-041)	Other bacterial diseases	165	14.99	33	6.38	40	3.59	59	2.65	297	5.99
4.	I (045-079)	Viral diseases	1	0.09	27	5.22	28	2.52	16	0.72	72	1.45
5.	II(140-239)	Neoplasms	1	0.09	58	11.22	137	12.31	258	11.57	454	9.15
6.	III(240-279)	Nutritional and metabolic diseases and immunity disorder	14	1.27	11	2.13	29	2.61	124	5.56	178	3.59
7.	VI(320-389)	Disease of the nervous system & sense organs	70	6.36	77	14.89	60	5.39	60	2.69	267	5.38
8.	VII(390-429)	Heart diseases	137	12.44	78	15.09	90	8.09	462	20.72	767	15.45
9.	VII(430-438)	Cerebrovascular diseases	2	0.18	7	1.35	66	5.93	385	17.26	460	9.26
10.	VIII(460-519)	Disease of the respiratory system	122	11.08	55	10.64	42	3.77	127	5.69	346	6.96
11.	IX(520-579)	Disease of the digestive system	11	1.00	51	9.87	113	10.15	259	11.61	434	8.75
12.	X (580-629)	Disease of the urinary system	4	0.36	10	1.93	44	3.95	76	3.40	134	2.70
13.	XV(760-779)	Conditions originating in the perinatal period	315	28.62	-	-	-	-	24	1.00	315	6.35
14.	XVI(760-799)	Signs symptoms and ill defined conditions	118	10.72	12	2.32	15	1.35	27	1.21	172	3.47
15.	XVII(800-999)	Accidents injuries and poisoning	3	0.27	23	4.45	299	26.86	200	8.97	525	10.62
16.		Others	108	9.81	43	8.32	124	11.14	117	5.25	392	7.90
	Total		1101	100	517	100	1113	100	2230	100	4961	100

APPENDIX IX

**Statement showing the leading causes of death in 1991 according to age group
Kollam**

Sl. No.	Code No.	Cause of death	Below 1 year	%	1-14	%	15-44	%	45 & above	%	Total	%
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	I (001-009)	Intestinal infection disease	4	1.74	11	15.49	9	4.25	33	2.64	57	3.23
2.	I (010-018)	Tuberculosis	-	-	1	1.41*	5	2.36	50	4.00	56	3.18
3.	I (020-041)	Other bacterial diseases	17	7.39	3	4.23	3	1.42	18	1.44	41	2.33
4.	I (045-079)	Viral diseases	-	-	6	8.45	5	2.36	5	0.40	16	0.91
5.	II(140-239)	Neoplasms	1	0.43	1	1.41	8	3.77	82	6.57	92	5.22
6.	III(240-279)	Nutritional and metabolic diseases and immunity disorders	3	1.30	3	4.23	8	3.77	92	7.37	106	6.02
7.	VI(320-389)	Disease of the nervous system and sense organs	10	4.35	14	19.72	18	8.49	53	4.24	95	5.39
8.	VII(390-429)	Heart diseases	10	4.35	4	5.62	45	21.22	405	32.43	464	26.33
9.	VII(430-438)	Cerebrovascular diseases	2	0.87	-	-	8	3.77	135	10.80	145	8.23
10.	VIII(460-519)	Disease of the respiratory system	30	13.05	14	19.72	12	5.66	144	11.53	200	11.35
11.	IX(520-570)	Disease of the digestive system	5	2.18	3	4.23	16	7.55	71	5.68	95	5.39
12.	X(580-629)	Disease of the urinary system	-	-	3	4.23	12	5.66	36	2.88	51	2.89
13.	XV(760-779)	Conditions originating in the perinatal period	132	57.39	-	-	-	-	-	-	132	7.49
14.	XVI(760-799)	Signs symptoms and ill defined conditions	9	3.91	2	2.82	12	5.66	36	2.88	59	3.35
15.	XVII(800-999)	Accidents injuries and poisoning	1	0.43	2	2.82	41	19.34	53	4.24	97	5.51
16.		Others	6	2.61	4	5.62	10	4.72	36	2.88	56	3.18
Total			230	100	71	100	212	100	1249	100	1762	100

APPENDIX X

Statement showing the leading causes of death in 1991 according to age group

Alappuzha

Sl. No.	Code No.	Cause of death	Below 1 year	%	1-14	%	15-44	%	45 & above	%	Total	%
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	I (001-009)	Intestinal infection diseases	5	3.07	3	6.00	5	2.67	47	5.03	60	4.49
2.	I (010-018)	Tuberculosis	1	0.61	-	-	4	2.14	51	5.45	56	4.20
3.	I (020-041)	Other bacterial diseases	23	14.11	-	-	7	3.74	23	2.67	55	4.12
4.	I (045-079)	Viral diseases	-	-	5	10.00	4	2.14	2	0.21	11	0.82
5.	II(140-239)	Neoplasms	-	-	2	4.00	10	5.35	46	4.32	58	4.34
6.	III(240-279)	Nutritional and Metabolic and immunity diseases	5	3.07	3	6.00	4	2.14	47	5.03	59	4.42
7.	VI(320-389)	Disease of the nervous system and sense organs	12	7.36	11	22.00	10	5.35	36	3.85	69	5.17
8.	VII(390-429)	Heart disease	7	4.29	4	8.00	34	18.18	315	33.69	360	26.97
9.	VII(430-438)	Cerebrovascular diseases	5	3.07	1	2.00	4	2.14	94	10.05	104	7.79
10.	VIII(460-515)	Disease of the respiratory system	30	18.40	8	16.00	16	8.56	96	10.27	150	11.24
11.	IX(520-574)	Disease of the digestive system	2	1.23	2	4.00	8	4.28	76	8.13	88	6.59
12.	X (580-629)	Disease of the urinary system	-	-	1	2.00	5	2.67	31	3.32	37	2.77
13.	XV(760-779)	Conditions originating in the perinatal period	49	30.06	-	-	-	-	-	-	49	3.67
14.	XVI(760-799)	Signs symptoms and ill defined conditions	5	3.07	1	2.00	3	1.60	11	1.18	20	1.50
15.	XVII(800-999)	Accidents injuries and poisoning	-	-	6	12.00	63	33.69	39	4.17	108	8.09
16.	XVIII(990-999)	Others	19	11.66	3	6.00	10	5.35	19	2.03	51	3.82
	Total		163	100	50	100	187	100	935	100	1335	100

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APPENDIX XI

**Statement showing the leading causes of death in 1991 according to age group
Kochi**

Sl. No.	Code No.	Cause of death	Below 1 year	%	1-14	%	15-44	%	45 & above	%	Total	%
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	I (001-009)	Intestinal infection diseases	3	0.96	4	3.70	5	1.35	32	1.35	44	1.30
2.	I (010-018)	Tuberculosis	1	0.32	1	0.93	30	5.08	141	5.96	173	5.13
3.	I (020-041)	Other bacterial diseases	27	8.65	12	11.11	11	1.87	31	1.31	81	2.41
4.	I (045-079)	Viral diseases	2	0.64	24	22.22	15	2.54	12	0.51	53	1.57
5.	II(140-239)	Neoplasms	-	-	5	4.63	41	6.95	256	10.83	302	8.95
6.	III(240-279)	Nutritional and metabolic and immunity diseases	-	-	5	4.63	12	2.03	185	7.83	202	5.99
7.	VI(320-389)	Disease of the nervous system and sense organs	8	2.57	4	3.70	14	2.37	16	0.68	42	1.24
8.	VII(390-429)	Heart diseases	23	7.37	9	8.34	156	26.44	920	38.92	1108	32.84
9.	VII(430-438)	Cerebrovascular disease	2	0.64	2	1.85	39	6.61	296	12.52	339	10.05
10.	VIII(460-519)	Disease of the respiratory system	25	8.02	14	12.96	11	1.86	105	4.44	155	4.59
11.	IX(520-574)	Disease of the digestive system	4	1.28	-	-	23	3.90	115	4.86	142	4.21
12.	X(580-629)	Disease of the urinary system	1	0.32	4	3.70	22	3.73	79	3.34	106	3.14
13.	XV(760-779)	Conditions originating in the perinatal period	169	54.17	-	-	-	-	-	-	169	5.01
14.	XVI(760-799)	Signs symptoms and ill defined conditions	2	0.64	4	3.70	8	1.36	11	0.47	25	0.74
15.	XVII(800-999)	Accidents injuries and poisoning	1	0.32	14	12.97	186	31.53	129	5.46	330	9.78
16.		Others	44	14.10	6	5.56	17	2.88	36	1.52	103	3.05
	Total		312	100	108	100	590	100	2364	100	3374	100

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APPENDIX XII

**Statement showing the leading causes of death in 1991 according to age group
Kozhikode**

Sl. No.	Code No.	Cause of death	Below 1 year	%	1-14	%	15-44	%	45 & above	%	Total	%
1	2	3	4	5	6	7	8	9	10	11	12	13
1.	I (001-009)	Intestinal infection, disease	33	3.96	53	13.02	47	4.71	56	2.03	189	3.78
2.	I (010-018)	Tuberculosis	2	0.24	8	1.97	62	6.21	104	3.77	176	3.52
3.	I (020-041)	Other bacterial disease	82	9.83	24	5.90	32	3.20	69	2.50	207	4.14
4.	I (045-079)	Viral disease	8	0.96	60	14.74	43	4.30	35	1.27	146	2.92
5.	II(140-239)	Neoplasms	1	0.12	28	6.88	117	11.71	356	12.90	502	70.05
6.	III(240-279)	Nutritional and metabolic diseases and immunity disorder	1	0.12	2	0.49	30	3.00	167	6.05	200	4.00
7.	VI(320-389)	Disease of the nervous system and sense organs	48	5.76	38	9.34	37	3.71	26	0.94	149	2.99
8.	VII(390-459)	Heart disease	4	0.48	13	3.19	129	12.91	943	34.18	1089	21.78
9.	VII(430-438)	Cerebrovascular disease	3	0.36	3	0.74	32	3.20	368	13.34	406	8.12
10.	VIII(460-519)	Disease of the respiratory system	117	14.03	50	12.29	61	6.11	215	7.79	443	8.86
11.	IX(520-579)	Disease of the digestive system	11	1.32	20	4.91	77	7.71	193	7.00	301	6.02
12.	X (580-629)	Disease of the urinary system	3	0.36	7	1.72	32	3.20	39	1.42	81	1.62
13.	XV(760-779)	Conditions originating in the perinatal period	494	59.22	-	-	-	-	-	-	494	9.88
14.	XVI(780-799)	Signs, symptoms and ill defined conditions	1	0.12	2	0.49	1	0.10	6	0.21	10	0.20
15.	XVII(800-999)	Accidents injuries and poisoning	2	0.24	56	13.76	213	21.32	126	4.57	397	7.94
16.		Others	24	2.88	43	10.56	86	8.61	56	2.03	209	4.18
	Total		834	100	407	100	999	100	2759	100	4999	100

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1881-1882 at Old Oak, Va. 5000' alt. 1881-1882 at Old Oak, Va. 5000' alt.

Year	Locality	Altitude	Number of plants	Number of seeds	Number of embryos	Number of plants	Number of seeds	Number of embryos
1881	Old Oak, Va.	5000'	100	100	100	100	100	100
1882	Old Oak, Va.	5000'	100	100	100	100	100	100
1883	Old Oak, Va.	5000'	100	100	100	100	100	100
1884	Old Oak, Va.	5000'	100	100	100	100	100	100
1885	Old Oak, Va.	5000'	100	100	100	100	100	100
1886	Old Oak, Va.	5000'	100	100	100	100	100	100
1887	Old Oak, Va.	5000'	100	100	100	100	100	100
1888	Old Oak, Va.	5000'	100	100	100	100	100	100
1889	Old Oak, Va.	5000'	100	100	100	100	100	100
1890	Old Oak, Va.	5000'	100	100	100	100	100	100
1891	Old Oak, Va.	5000'	100	100	100	100	100	100
1892	Old Oak, Va.	5000'	100	100	100	100	100	100
1893	Old Oak, Va.	5000'	100	100	100	100	100	100
1894	Old Oak, Va.	5000'	100	100	100	100	100	100
1895	Old Oak, Va.	5000'	100	100	100	100	100	100
1896	Old Oak, Va.	5000'	100	100	100	100	100	100
1897	Old Oak, Va.	5000'	100	100	100	100	100	100
1898	Old Oak, Va.	5000'	100	100	100	100	100	100
1899	Old Oak, Va.	5000'	100	100	100	100	100	100
1900	Old Oak, Va.	5000'	100	100	100	100	100	100

1881-1882 at Old Oak, Va. 5000' alt. 1881-1882 at Old Oak, Va. 5000' alt.

1881-1882 at Old Oak, Va. 5000' alt.

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