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**Report on  
Medical Certification of  
Cause of Death  
1998**

Department of Economics & Statistics  
Thiruvananthapuram  
2003

## **PREFACE**

The scheme of " Medical Certification of Cause of Death" was introduced in the state as part of All India Programme for improvement of Vital Statistics. In this state it was introduced in the three corporations viz., Thiruvananthapuram, Kochi and Kozhikkode and in the Municipalities of Kollam and Alappuzha with a view to obtain valuable data regarding the causes of death. However due to paucity of Technical Staff in Muinicipalities/ Corporations data pertaining to Thiruvananthapuram Corporation alone has been compiled and included in this report.

The report pertaining to Thiruvananthapuram Corporation for the year 1998 was prepared by the Vital Statistics unit of this Directorate.

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30-01-2003

## **CONTENTS**

- 1 Introduction
- 2 A comparative study of leading causes of death in this corporation
- 3 Sex-wise comparative study of leading causes of this Corporation
- 4 Age-wise study of leading causes of this Corporation
- 5 Conclusion

## **APPENDIX**

	Page No.
1. Death according to age group in Thiruvananthapuram Corporation year 1998	5
2. Percentage of Death due to major discases with male and female break up- Thiruvananthapuram Corporation	5
3. Sex-wise details of medically certified deaths in Thiruvananthapuram Corporation	6
4. Statement showing the leading causes of death in Thiruvananthapuram Corporation in 1998 – According to Age group	7

## **CONTENTS**

- 1 Introduction
- 2 A comparative study of leading causes of death in this corporation
- 3 Sex-wise comparative study of leading causes of this Corporation
- 4 Age-wise study of leading causes of this Corporation
- 5 Conclusion

## **APPENDIX**

	Page No.
1. Death according to age group in Thiruvananthapuram Corporation year 1998	5
2. Percentage of Death due to major diseases with male and female break up- Thiruvananthapuram Corporation	5
3. Sex-wise details of medically certified deaths in Thiruvananthapuram Corporation	6
4. Statement showing the leading causes of death in Thiruvananthapuram Corporation in 1998 – According to Age group	7

## **REPORT ON MEDICAL CERTIFICATION OF CAUSE OF DEATH – 1998**

Mortality rate is an indicator of health status of any society. It also reflects the standard of health care, social and public health system of the state. Therefore, it has been apparently included as a factor for calculating Human development Index, as it reflects certain salient features of real development of a nation that envisage to establish an environment for the people to enjoy long, healthy and creative life.

Cause of death is one of the most important aspects of mortality. Therefore, scientific data on cause of death is highly warranted aspect of population.

Death is a phenomenon happens due to either immediate cause or antecedent causes. Identification of the exact cause of death is very arduous. Similarly death may be due to diseases, suicide, accident or homicide. Pooling the data on cause of death has been done as the part of national level scheme of Medical Certification of Cause of Death under Vital Statistics data collection.

### **THE SCHEME OF MEDICAL CERTIFICATION OF CAUSE OF DEATH**

The scheme of Medical Certification of Cause of Death was introduced in the State as part of All India Programme for improvement of Vital Statistics. In this State it was introduced in the three corporations of; Thiruvananthapuram, Kochi and Kozhikode and in the Municipalities of Kollam and Alappuzha. The scheme envisages collection of relevant data relating to all deaths of institutional origin. The main objectives of the scheme are:-

- (i) To obtain reliable data on cause of death.
- (ii) To pinpoint the leading cause of death for male and female.
- (iii) To identify the individual causes of death among certain specified groups like infants, mothers and aged persons.
- (iv) To study the mortality pattern of certain important diseases like heart attack, tuberculosis, cancer etc.
- (v) To provide referral support for the prioritization of health programmes.

The present study confine to the Thiruvananthapuram Corporation for the year 1998.

### **METHODOLOGY**

The scheme envisages the collection of accurate data relating to all death in medical institutions in the corporation area having facilities for in-patient treatment. The attending physician is required to furnish the data on cause of death in the prescribed form. The cause of death certificates are

scrutinised and identified and coded by the Deputy Health Officer appointed for the purpose. For coding the causes, the list 'A' of the International Classification of Disease (IX Revision) is adopted.

### **CAUSE OF DEATH**

Cause of death has been 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 occurs as a result of a chain of causes.

### **LIMITATIONS**

The purview of the present study is limited only to the capital city of Thiruvananthapuram. Events are not fully covered due to under-reporting. Inadequacy of medically certified deaths as larger portion of death attributed to senility ill-defined and unknown causes of death etc. Since this scheme covers only institutional death which constitute only a portion of the total deaths, the system is not comprehensive.

### **THIRUVANANTHAPURAM CORPORATION – 1998**

As per 1991 census, population of Thiruvananthapuram Corporation was 524006 with an area of 73.93 sq. km. Also having a density of population of 6993. During the year of report, the number of medically certified deaths verified and analysed were 6857.

### **SEX-WISE DISTRIBUTION**

Out of the 6857 deaths verified during the year, 4287 (62.52%) were of male and 2570 (37.48%) of female. For the previous year of 1997 the total number of deaths reported was 6429. and the male-female break-up were 4039 (62.82%) and 2390 (37.18%) respectively.

### **FINDINGS**

- i. Intestinal Infection diseases – Code I (001-009) 0.36% of the total medically certified deaths were due to this cause, with male and female break-up of 0.28% and 0.50% respectively.
- ii. Tuberculosis – code I (010 – 018) Deaths due to Tuberculosis constituted 3.18 % of which 3.18 % was from male and 2.06 % was from female.
- iii. Other Bacterial diseases – Code I (020 – 041) The percentage of deaths occurred due to Bacterial diseases came to be 2.19 % with a share of male and female percentage of 1.96 and 2.57 respectively.
- iv. Viral diseases – code I (045 – 079) Viral disease caused 1.23 % of total deaths during the year with male and female break-up of 1.10 % and 1.44 respectively.

- v. Neoplasm – code II (140 – 239) Deaths due to Neoplasm during the year amounted to 12.18 % with male – female contribution of 10.86 % and 12.18 % respectively. This rates 4<sup>th</sup> place among the causes During the year 1997 the percentage of death due to Neoplasm was 10.70, out of this 10.45 % formed male death and 11.13 % formed female death.
- vi. Nutritional and metabolic diseases and immunity diseases – code III (240 – 279) About 4.76 % of the total deaths were due to this cause, of which 4.62 % was of males and 4.98 % was of females.
- vii. Diseases of the nervous system and sense organs – code (320 – 389) 2.84 % of the total deaths occurred due to this cause. The male – female break-up being 2.75 % and 3.00% respectively.
- viii. Heart diseases – code VII (390 – 429) Heart diseases occupy the most predominant cause of death. Out of the total deaths 18.19 % was due to heart diseases with male and female break –up of 18.82 % and 17.12 % respectively. Male death is prominent due to this cause. Compared to the previous year (1977) the total deaths occurred due to heart diseases were 19.09 % with male-female break-up of 20.08 % and 17.41 % respectively.
- ix. Cerebro Vascular diseases – Code VII (430 – 438) Cerebro Vascular diseases forms 3<sup>rd</sup> place among the cause of death. 12.32 % of the deaths occurred due to this cause. In this 11.27 % forms male death and 14.08 % female death. Here also female death is greater. In 1997 the percentage share was – male 11.44 % and 14.81 respectively out of the total 12.69 % case of death due to this cause.
- x. Diseases of respiratory system – code VIII (460 – 519) Percentage share of death due to this cause occupy 6.69 %, in which the male and female deaths were 7.18% and 5.87 respectively.
- xi. Diseases of the digestive system – code IX (520 – 579) Deaths due to this cause claimed 7.29 % of the total deaths with male and female share of 8.54 % and 5.21% respectively.
- xii. Conditions Originating in the Perinatal period – code XV (760 – 779) Among the causes of death this occupy 5.44 % during the year, with 3.69 % of males 8.37 % of females.
- xiii. Diseases of the Urinary system – code (580 – 629) Deaths due to this cause claimed 3.01 % of the total during the year with the male female share of 2.82 % and 3.31 % respectively.

- xiv. Signs, symptoms of ill-defined conditions – code XVI (780 – 799) Deaths occurred due to ill-defined condition forms 1.28 % of the total, out of which 1.38 % was male deaths and 1.13 % female death.
- xv. Accidents, injuries, and poisoning – code XVII (800 – 999) The total percentage of deaths due to this cause was 13.37 % in which 13.85 % was among males and 12.87 % was among females. This forms the 2<sup>nd</sup> major cause of death. For the year 1997 the corresponding figures were 10.03 % (total), Male 10.65 %, and Female 9.00 % respectively.
- xvi. Other causes Causes other than those mentioned above accounted to 5.67 % out of which male and female share was 4.92 % and 6.93 % respectively.

### **DEATH ACCORDING TO AGE GROUP**

The percentage of death for the age group below 1 year (infants) was 8.46 % followed by 4.10 % followed by 4.10 % for the age group 1 – 14. The percentage of death among the age group 15 – 44 was 24.44 % and that 63 % of death occurred in the age group of 45 and above.

The major killer disease in the age group below 1 year (infants) was due to conditions originating in the perinatal period (63.44%) and the major cause of death of the age group 1 – 14 was Neoplasm (29.54%). Accidents, injuries and poisoning act as major killer item 29.06 % among the age group 15 – 44. For the age group 45 and above, heart diseases indicated the major killer disease (23.52 %) followed by Cerebro Vascular diseases which formed 17.18 %.

### **CONCLUSION**

Heart diseases emerged as the major cause of death (18.19 %), especially in the age group of 45 and above. Followed by accidents, injuries and poisoning (13.37%) and Cerebro vascular diseases caused 12.32 % of the deaths during the year 1998. This shows a slight decrease in deaths due to heart diseases, compared to that of the previous year's figures ie. 19.09 % deaths occurred in 1997 due to this cause.



APPENDIX - I

**DEATH ACCORDING TO AGE GROUP**

CENTRE : THIRUVANANTHAPURAM

YEAR : 1998.

Sl. No.	AGE GROUP	NO.	PERCENTAGE
1	Below 1 year	580	8.46
2	1 - 14	281	4.10
3	15 - 44	1676	24.44
4	45 and above	4320	63.00
	TOTAL	6857	100.00

APPENDIX - II

**PERCENTAGE OF DEATHS DUE TO MAJOR DISEASES, WITH MALE AND FEMALE BREAK-UP.**

CENTRE THIRUVANANTHAPURAM

YEAR 1998.

Sl. No.	CODE NO:	MAJOR DISEASES	MALE %	FEMALE %	TOTAL %
1	VII 390 - 429	Heart diseases	18.82	17.12	18.19
2	XVII 800 - 999	Accidents, injuries and poisoning	13.85	12.57	13.37
3	VIII 430 - 438	Cerebro vascular diseases	11.27	14.08	12.32
4	II 140 - 239	Neoplasm	12.97	10.86	12.18
5	IX 520 - 579	Diseases of the digestive system	8.54	5.21	7.29
6	VIII 460 - 519	Diseases of the respiratory system	7.18	5.87	6.69
7	XV 760 - 779	Conditions originating in the perinatal period	3.69	8.37	5.44
8	III 240 - 279	Nutritional and metabolic diseases and immunity disorders.	4.62	4.98	4.76
	Percentage Total		80.94	79.06	80.24

APPENDIX - III

**SEXWISE DETAILS OF MEDICALLY CERTIFIED DEATHS IN  
THIRUVANANTHAPURAM CORPORATION - 1998.**

Sl. No.	Code No.	Causes of death	Male	%	Female	%	Total	%
1	001-009	Intestinal Infectious diseases	12	0.28	13	0.50	25	0.36
2	010-018	Tuberculosis	165	3.85	53	2.06	218	3.18
3	020-041	Other Bacterial diseases	84	1.96	66	2.57	150	2.19
4	045-079	Viral diseases	47	1.10	37	1.44	84	1.23
5	140-239	Neoplasm	556	12.97	279	10.86	835	12.18
6	240-279	Nutritional and Metabolic diseases and Immunity diseases	198	4.62	128	4.98	326	4.76
7	320-389	Diseases of the nervous systems and sense organs	118	2.75	77	3.00	195	2.84
8	390-429	Heart diseases	807	18.82	440	17.12	1247	18.19
9	430-438	Cerebro vascular diseases	483	11.27	362	14.08	845	12.32
10	460-519	Diseases of the respiratory system	308	7.18	151	5.87	459	6.69
11	520-579	Disease of the digestive system	366	8.54	134	5.21	500	7.29
12	580-629	Disease of the urinary system	121	2.82	85	3.31	206	3.01
13	760-779	Conditions originating in the perinatal period	158	3.69	215	8.37	373	5.44
14	780-799	Signs, symptoms of ill defined conditions	59	1.38	29	1.13	88	1.28
15	800-999	Accidents, injuries and poisoning	594	13.85	323	12.57	917	13.37
16	(080-139) (439-459) (280-319) (630-759)	Others	211	4.92	178	6.93	389	5.67
		<b>TOTAL</b>	<b>4287</b>	<b>100</b>	<b>2570</b>	<b>100</b>	<b>6857</b>	<b>100</b>

APPENDIX - IV

STATEMENT SHOWING THE LEADING CAUSE OF DEATH ACCORDING TO AGE-GROUP

CENTRE : THIRUVANANTHAPURAM

YEAR : 1998

Sl. No.	Code	Cause of death	Below 1 year					
			Male	%	Female	%	Total	%
1	001-009	Intestinal Infectious diseases	1	0.38	2	0.63	3	0.52
2	010-018	Tuberculosis	-	-	-	-	-	-
3	020-041	Other Bacterial diseases	11	4.14	9	2.87	20	3.45
4	045-079	Viral diseases	-	-	-	-	-	-
5	140-239	Neoplasm	2	0.75	1	0.32	3	0.52
6	240-279	Nutritional and Metabolic diseases and immunity diseases	-	-	1	0.32	1	0.17
7	320-389	Diseases of the nervous systems and sense organs	9	3.38	6	1.91	15	2.59
8	390-429	Heart diseases	7	2.63	2	0.63	9	1.55
9	430-438	Cerebro vascular diseases	-	-	-	-	-	-
10	460-519	Diseases of the respiratory system	8	3.01	7	2.23	15	2.59
11	520-579	Disease of the digestive system	2	0.75	1	0.32	3	0.52
12	580-629	Disease of the urinary system	3	1.13	1	0.32	4	0.69
13	760-779	Conditions originating in the perinatal period	157	59.02	211	67.20	368	63.44
14	780-799	Signs, symptoms of ill defined conditions	1	0.37	3	0.96	4	0.69
15	800-999	Accidents, injuries and poisoning	-	-	1	0.32	1	0.17
16	(080-139) (439-459) (280-319) (630-759)	Others	65	24.44	69	21.97	134	23.10
		TOTAL	266	100	314	100	580	100

APPENDIX – IV Contd.

Sl. No.	Code	Cause of death	1 - 14 years					
			Male	%	Female	%	Total	%
1	001-009	Intestinal Infectious diseases	2	1.31	1	0.78	3	1.07
2	010-018	Tuberculosis	1	0.65	1	0.78	2	0.71
3	020-041	Other Bacterial diseases	6	3.92	4	3.13	10	3.56
4	045-079	Viral diseases	2	1.31	3	2.34	5	1.78
5	140-239	Neoplasm	53	34.64	30	23.44	83	29.54
6	240-279	Nutritional and Metabolic diseases and immunity diseases	4	2.61	5	3.91	9	3.20
7	320-389	Diseases of the nervous systems and sense organs	11	7.20	12	9.38	23	8.19
8	390-429	Heart diseases	11	7.20	8	6.25	19	6.76
9	430-438	Cerebro vascular diseases	4	2.61	3	2.34	7	2.49
10	460-519	Diseases of the respiratory system	6	3.92	8	6.25	14	4.98
11	520-579	Disease of the digestive system	5	3.27	3	2.34	8	2.85
12	580-629	Disease of the urinary system	4	2.61	3	2.34	7	2.49
13	760-779	Conditions originating in the perinatal period	1	0.65	4	3.13	5	1.78
14	780-799	Signs, symptoms of ill defined conditions	4	2.61	3	2.34	7	2.49
15	800-999	Accidents, injuries and poisoning	18	11.76	16	12.50	34	12.10
16	(080-139) (439-459) (280-319) (630-759)	Others	21	13.73	24	18.75	45	16.01
		TOTAL	153	100	128	100	281	100

APPENDIX - IV Contd.

Sl. No.	Code	Cause of death	15 - 44 years					
			Male	%	Female	%	Total	%
1	001-009	Intestinal Infectious diseases	4	0.39	2	0.30	6	0.36
2	010-018	Tuberculosis	37	3.65	19	2.87	56	3.34
3	020-041	Other Bacterial diseases	19	1.87	19	2.87	38	2.27
4	045-079	Viral diseases	18	1.78	11	1.66	29	1.73
5	140-239	Neoplasm	136	13.41	97	14.65	233	13.90
6	240-279	Nutritional and Metabolic diseases and immunity diseases	43	4.24	28	4.23	71	4.24
7	320-389	Diseases of the nervous systems and sense organs	34	3.35	23	3.47	57	3.40
8	390-429	Heart diseases	130	12.82	73	11.03	203	12.11
9	430-438	Cerebro vascular diseases	51	5.03	45	6.80	96	5.73
10	460-519	Diseases of the respiratory system	53	5.23	25	3.78	78	4.65
11	520-579	Disease of the digestive system	101	9.96	38	5.74	139	8.29
12	580-629	Disease of the urinary system	36	3.55	28	4.23	64	3.82
13	760-779	Conditions originating in the perinatal period	-	-	-	-	-	-
14	780-799	Signs, symptoms of ill defined conditions	18	1.78	8	1.21	26	1.55
15	800-999	Accidents, injuries and poisoning	295	29.09	192	29.00	487	29.06
16	(080-139) (439-459) (280-319) (630-759)	Others	39	3.85	54	8.16	93	5.55
		TOTAL	1014	100	662	100	1676	100

894

APPENDIX IV Contd.

Sl. No.	Code	Cause of death	Above 45 years					
			Male	%	Female	%	Total	%
1	001-009	Intestinal infectious diseases	5	0.18	8	0.55	13	0.30
2	010-018	Tuberculosis	127	4.45	33	2.25	160	3.70
3	020-041	Other Bacterial diseases	48	1.68	34	2.31	82	1.90
4	045-079	Viral diseases	27	0.95	23	1.57	50	1.16
5	140-239	Neoplasm	365	12.79	151	10.30	516	11.94
6	240-279	Nutritional and Metabolic diseases and immunity diseases	151	5.29	94	6.41	245	5.67
7	320-389	Diseases of the nervous systems and sense organs	64	2.24	36	2.46	100	2.32
8	390-429	Heart diseases	659	23.09	357	24.35	1016	23.52
9	430-438	Cerebro vascular diseases	428	15.00	314	21.42	742	17.18
10	460-519	Diseases of the respiratory system	241	8.44	111	7.57	352	8.15
11	520-579	Disease of the digestive system	258	9.04	92	6.28	350	8.10
12	580-629	Disease of the urinary system	78	2.73	53	3.62	131	3.03
13	760-779	Conditions originating in the perinatal period	-	-	-	-	-	-
14	780-799	Signs, symptoms of ill defined conditions	36	1.26	15	1.02	51	1.18
15	800-999	Accidents, injuries and poisoning	281	9.85	114	7.78	395	9.14
16	(080-139) (439-459) (280-319) (630-759)	Others	86	3.01	31	2.11	117	2.71
		TOTAL	2854	100	1466	100	4320	100