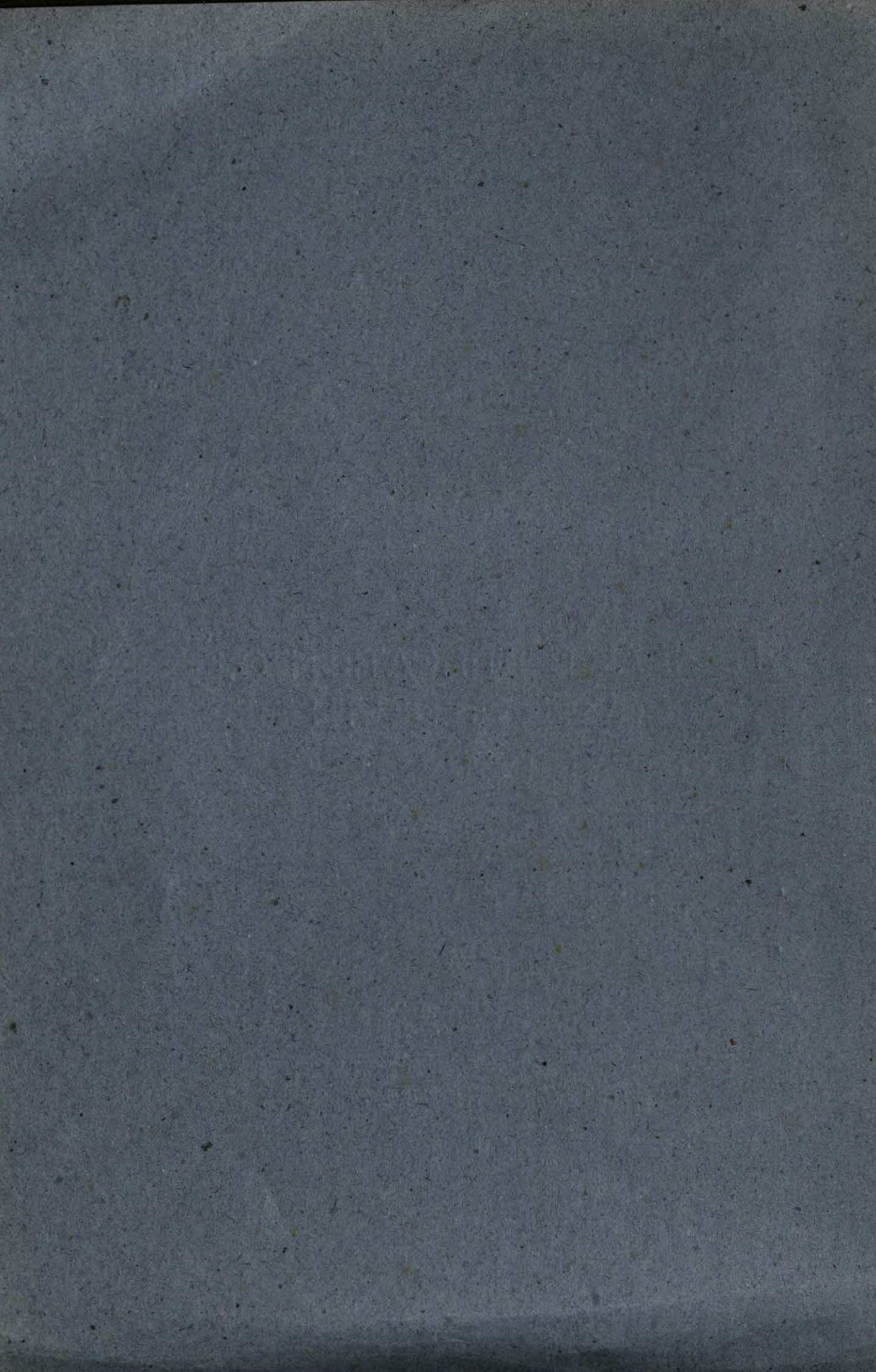




GOVERNMENT OF KERALA

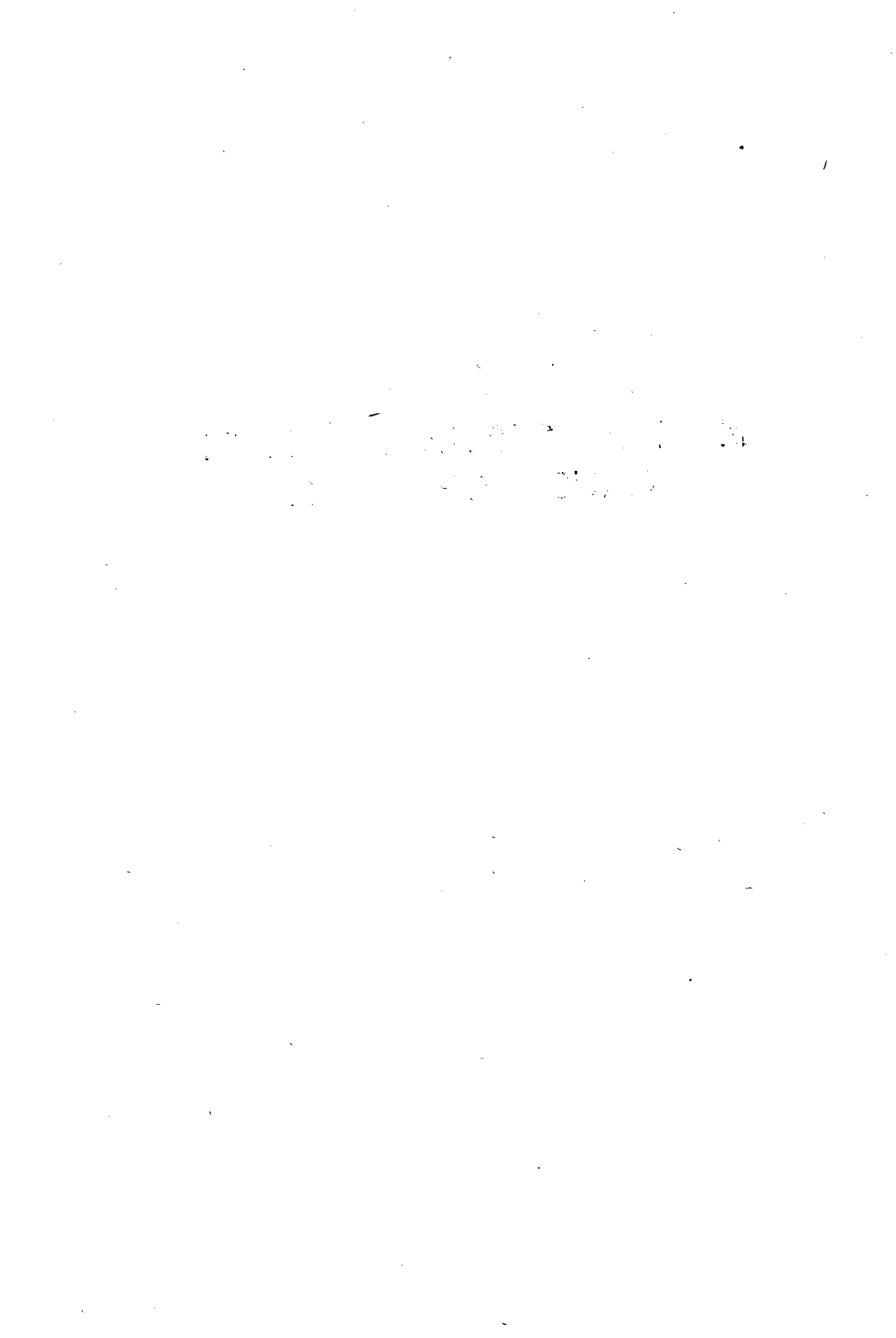
MEDICAL CERTIFICATION OF
CAUSES OF DEATH
1990

DEPARTMENT OF ECONOMICS & STATISTICS
THIRUVANANTHAPURAM



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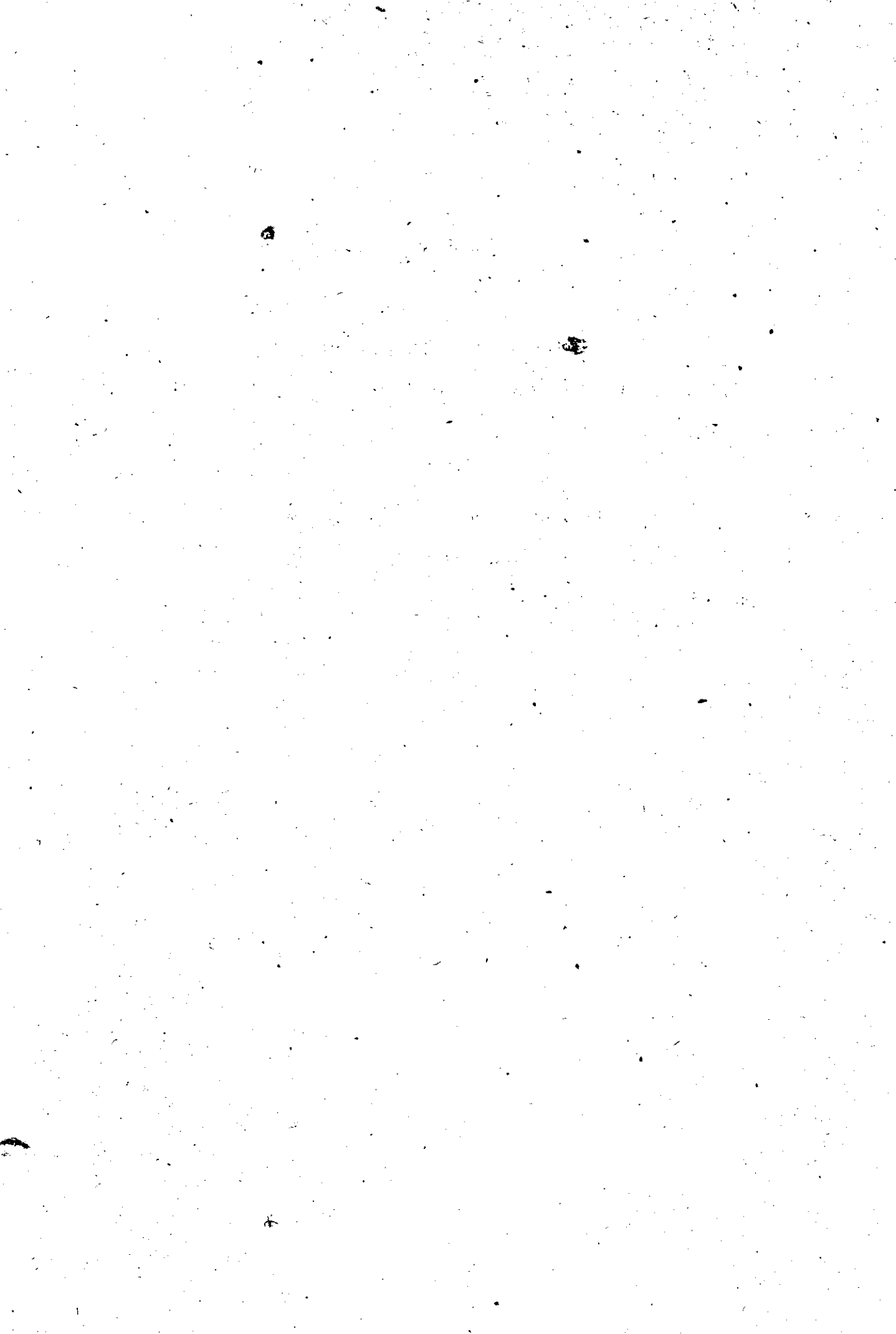
PREFACE

The scheme "Medical Certification of Causes of Death" is in operation in the City Corporation of Kochi and Kozhikode and in the Kollam Municipality.

This report deals with mortality by causes occurred in the State during the year 1990. It was prepared in the Vital Statistics Unit of this Department.

Thiruvananthapuram,
16--2--1993.

K.ACHUTHAN
DIRECTOR OF ECONOMICS AND
STATISTICS



Introduction

The reliable data on morbidity and mortality have an important role to play in the formulation of various health improvement schemes. The Statistics of causes of death help us to identify the occurrence of disease problems and to take preventive measures aiming at the promotion of the health care of the community. The health administrator depends on the data on mortality by causes for assessing the progress of health activities also.

The scheme Medical Certification of Cause of death was inceptioned in Kerala in 1969. The scheme, though with its inherent drawbacks, provides leading guidelines to medical practitioners, social workers, planners, researchers and others interested in the field.

This report presents the details of the analysis of the causes of death (medically certified) in the corporation of Kochi, Kozhikode and in Kollam Municipality.

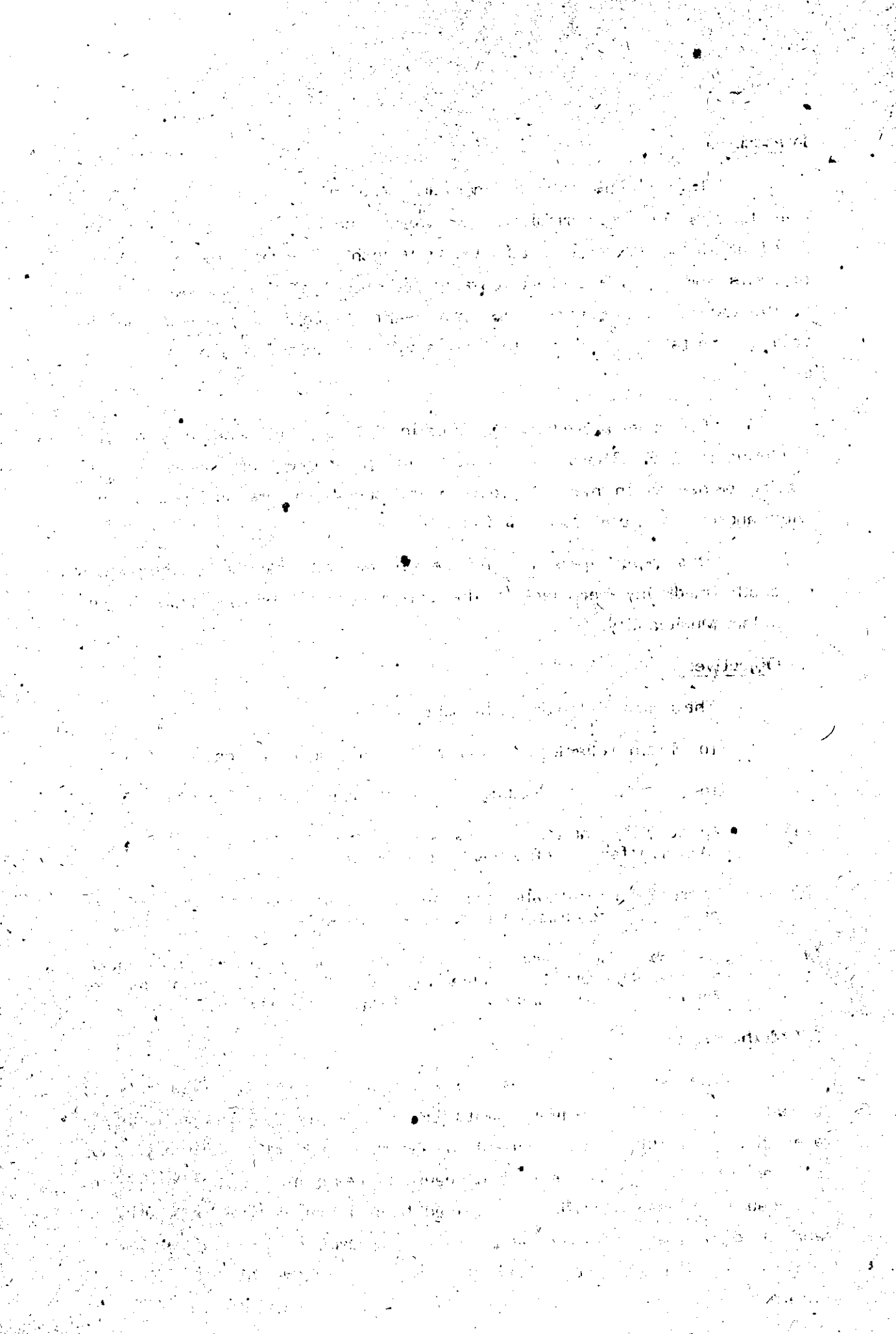
1.2 Objectives

The main objectives of the scheme are:

- (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 group such as infants, mothers and aged persons.
- (iv) to study the mortality pattern of certain important diseases like cancer, tuberculosis, heart disease etc. and
- (v) to enable public health and medical authorities to undertake specific investigations and studies into the mortality pattern of diseases for the evaluation and planning of health activities.

1.3 Methodology:

The scheme envisages the collection of relevant data relating to all deaths in the medical institutions within the Corporation/Municipal area having facilities for inpatient treatment. The attending physicians are requested to furnish the data on cause of death in the prescribed form. The causes of death certificates received from the institution are scrutinised and causes of death identified and coded by the Deputy Health Officer appointed for the purpose. For coding the causes of death, the list 'A' of the international classification of Diseases (IX Revision) is adopted.



1.4 Causes 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 occurs only as a result of a chain of causes.

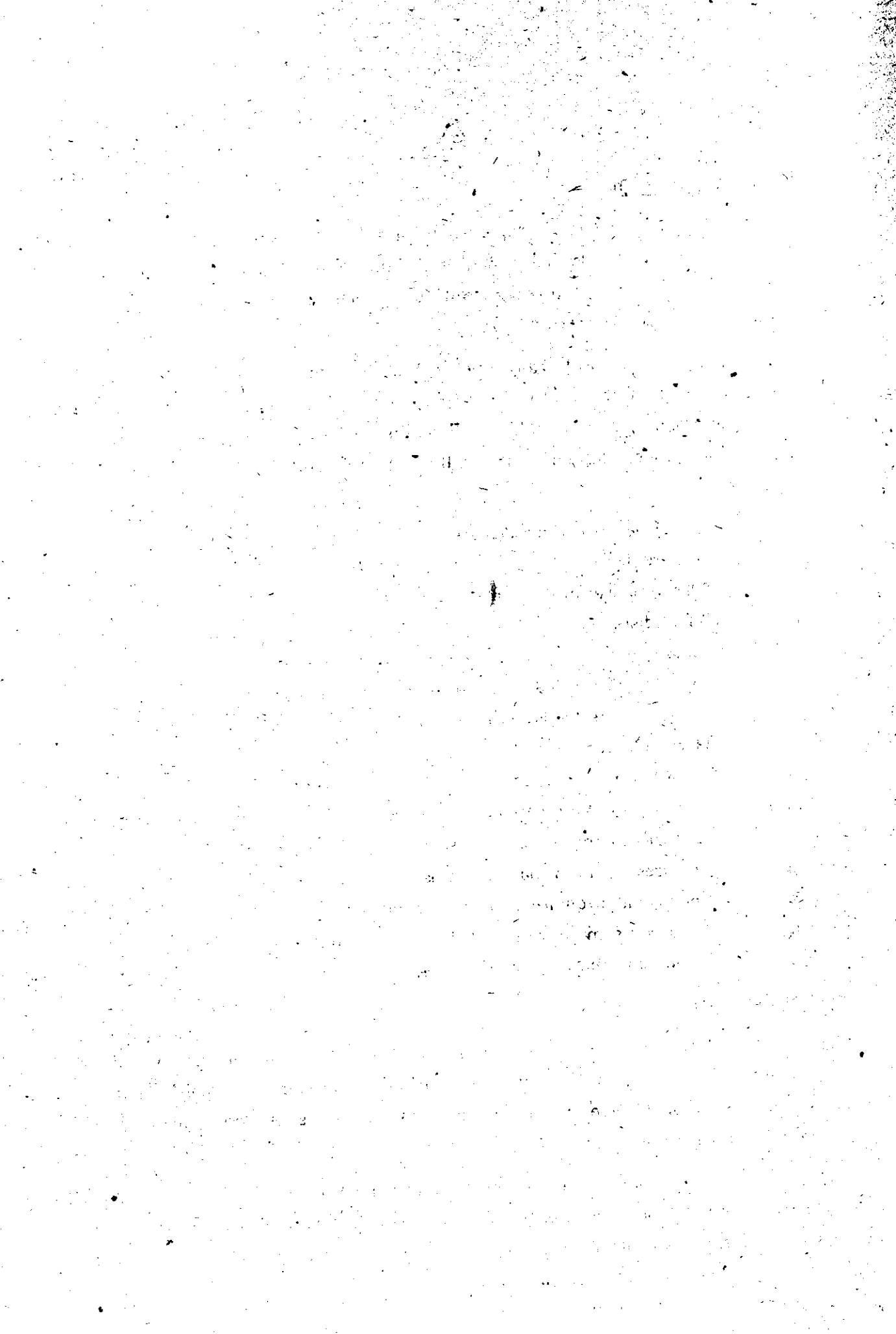
In this report, only the causes of death which account for at least 3 percent of the death may one or more of the three centres mentioned earlier are analysed in detail. The causes of death which are insignificant are grouped under 'others'. The following are considered as the prominent causes of death.

1. Intestinal infectious diseases
2. Tuberculosis
3. Other Bacterial diseases
4. Viral diseases
5. Neoplasm.
6. Nutritional and metabolic disease and immunity disorder
7. Disease of the nervous system and sense organs.
8. Heart diseases.
9. Cerebrovascular diseases.
10. Diseases of the respiratory system.
11. Diseases of the digestive system.
12. Diseases of the urinary systems.
13. Conditions originating in the perinatal period.
14. Signs and symptoms and all-illdefined conditions.
15. Accidents, injuries and poisoning.

1.5 Limitations:

Since the survey covers only the institutional deaths in Kollam Municipality and in the two city corporations the coverage is only a portion of total deaths. Therefore the indications on causes of death given in the report cannot be generalised.

In all the three centres, the leading causes of death was Heart Disease and its incidence was higher in the age group of 45 and above and that too for the males. The causes of death reported in respect of the two city corporations and Kollam Municipality are discussed below in detail.



2. KOCHI CORPORATION

The Kochi Corporation was formed in 1967. As per 1981 Census, population of Kochi Corporation was 5.13 lakhs with an area of 95 Sq.km. According to the census of 1991 it rose to about 5.64 lakhs. The density of population of the city corporation was 5944 per sq.km. During the year under report the numbers of medical certification forms verified and analysed were 3189 with male and female break-up of 2099 and 1090 respectively.

2.2 Sex-wise distribution of the leading causes of death

(Appendix-I)

Out of the 3189 deaths verified during the year, 2999 (65.82%) were of males and 1090 (34.18%) females as against 2238 (69.22%) and 995 (30.78%) during the previous year.

2.3 Causes of deaths:

The details of analysis of deaths due to important causes of death are given below.

(i) Intestinal infections diseases: Code I (001-009)

Deaths due to this disease was nearly one per cent during the year under report, with male and female break-up of 1.10% and 0.64% respectively.

(ii) Tuberculosis Code I (010-018)

Deaths due to Tuberculosis constituted 5.17% of the total deaths with mortality among males (6.10%) and females (3.39%) during the year under report. When compared to the previous year (3.74%) there was a slight increase in death due to this disease.

(iii) Other bacterial diseases - Code I (020-041)

The percentage share of deaths due to other bacterial diseases was 2.76 as against 3.22 in the previous year. 2.28% of the male deaths and 3.67% of the female deaths were due to those diseases.

(iv) Viral diseases - Code I (045-079)

Out of the total deaths, deaths due to viral diseases were only 1.10% both for males and females.

(v) Neoplasms - Code II

Deaths due to Neoplasms stood in the third place in this corporation, among the major causes of deaths. The percentage of death due to this disease was 10.66 as against 9.16% during the previous year (1989).

The proportion of male victims (10.67%) and as female victims (10.64%) succumbed to this disease was almost same.



vi. Nutritional and Metabolic diseases and immunity disorder - code III (240-279)

Deaths due to this disease were 4.58% while they were negligibly small during the previous year (1989). The male and female break-up was 4.43% and 4.86% respectively.

vii. Disease of the nervous system and sense organs - code VI (320-389)

Deaths due to this disease constituted only 1.72% of the total deaths with male and female break-up of 1.38% and 2.39% respectively.

viii. Heart disease - code VII (390-429)

The deaths due to heart diseases stood first in this city Corporation during the year under report also. The percentage of deaths due to heart diseases was 24.40 during the year under report as against 35.57% in the year 1989. There was a fall of 31% in the proportion of death due to this disease during the year when compared to the previous year. The male and female break-up was 24.96% and 23.30% respectively. There was not much sex difference in the case of deaths due to heart diseases in this city corporation during the year under report.

ix. Cerebrovascular diseases - Code VII (430-435)

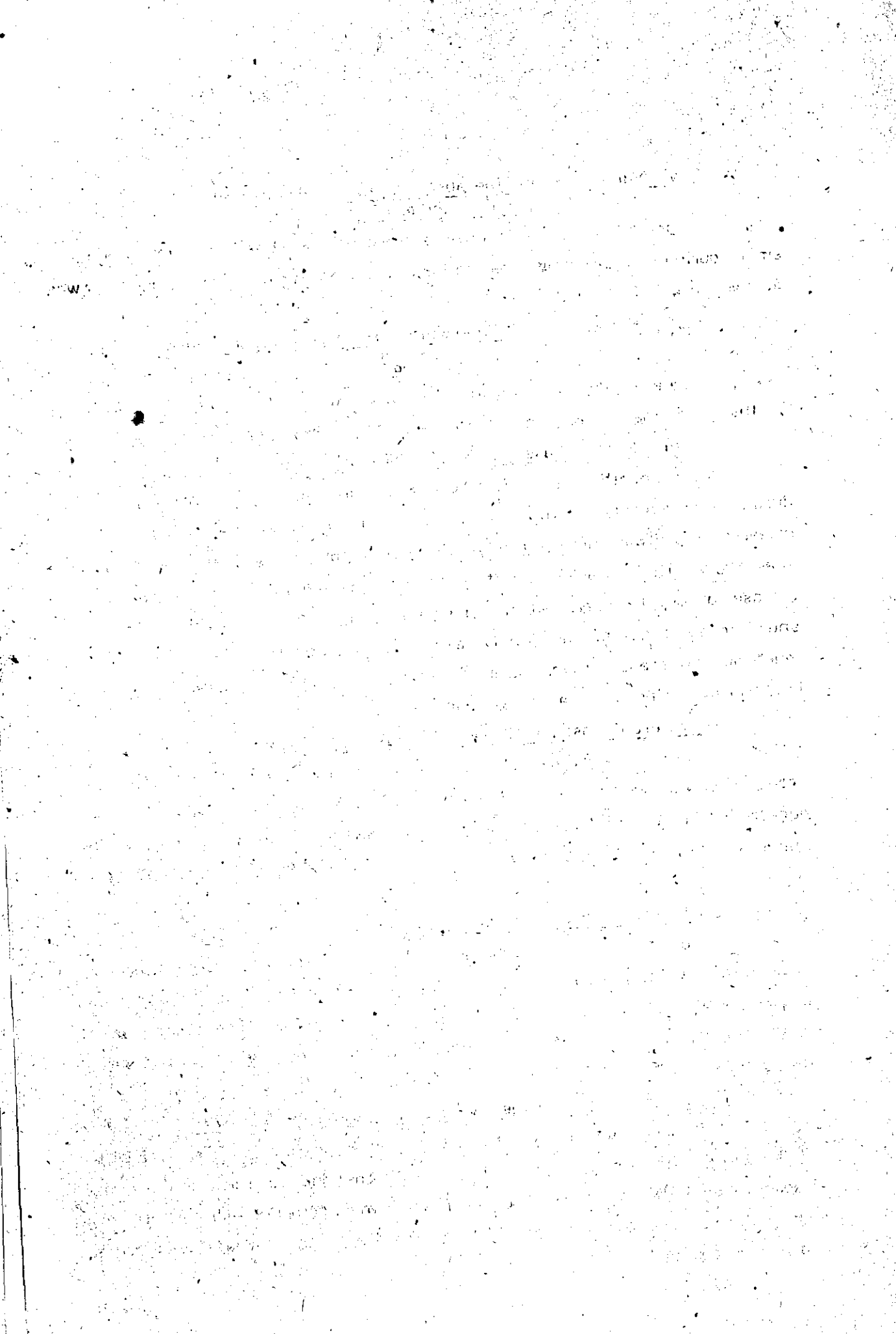
Cerebro vascular disease was the second largest killer in the city corporation during the year under report, 11.35% of the total deaths was occurred due to this diseases as against 10.89% in the previous year. The males and females victims in this category were 11.53% and 11.01% respectively.

x. Diseases of the respiratory system - Code VIII (460-519)

One of the major causes of death in this city corporation was diseases of the respiratory system. The percentage of deaths due to this diseases was 6.43 as against 5.88% in the year 1989. The proportion of deaths among females (6.88%) was higher than among males (6.19%) during the year under report.

xi. Diseases of the Digestive system - Code IX (520-579)

5.39% of the total deaths reported was due to this cause as against 2.72% during the previous year (1989). Deaths due to this disease were almost doubled during the year under report when compared to the previous year (1989). The male and female break-up due to this disease were 6.05% and 4.13% respectively.



xii. Diseases of the urinary system - Code X (580-629)

3.89% of the total deaths was due to this disease during the year under report. During the year 1989 death due to this disease was negligibly small.

xiii. Conditions originating in the perinatal period - Code XV (760-779)

Out of the total deaths reported, 6.02% of the deaths was due to this cause. During the previous year 1989 it was 6.06%. The deaths among males and females accounted for 5.05% and 7.89% respectively.

xiv. Signs, Symptoms & Ill - defined conditions - Code XVI (780-799)

Percentage share of deaths due to this disease was 3.10 as against 3.96 in the previous year. The male and female break-up were 3.14% and 3.0% respectively.

xv. Accidents, Injuries and Poisoning - Code XVIII (800-999)

The accidents injuries and poisoning were another major causes of death as in the previous year. The percentage of death due to this cause was 8.63 with male and female break-up of 9.05 and 7.80 respectively.

xvi. Others

3.86% of the total death was due to other causes which have not been mentioned earlier. The proportion of deaths among males and females were 2.59% and 6.34% of respectively.

2.4 Death according to age - Appendix-2

Age-wise analysis of causes of death in the age groups of below 1 year, 1-14, 15-44 and 45 and above is attempted below.

i. Below one year (Infants)

10.70% of the total deaths reported was under the age-group of below 1 year (infants) as against 8.04% in the previous year. As in the previous year the major killer diseases in this age group was conditions originate in the perinatal period (56.30%) followed by other bacterial disease, (8.50%) diseases of the respirating system (6.74%) and deaths due to heart diseases (4.40%).

ii. 1-14 years

Deaths occurred in this age group were only 3.04% of the total deaths. During the year 1989 the percentage of death in the age group was 5.97%. The deaths due to various causes in this age group decreased during the year under report when compared to the previous year. Accidents and injuries and poisoning ranked first in the list of major causes of death

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in this age group claiming 11.34% of deaths. The other important causes of death under this age group were other bacterial diseases viral disease, heart disease (10.31% each) disease of the respiratory system and diseases of the urinary system (9.28%) each.

iii. 15-44 years

19.28% of the total deaths were occurred in this age group. The accidents, injuries and poisoning were proved to be the major killer in this age group of 15-44. The percentage of, death in this age group due to the cause was 26.99 as against 26.18 during the previous year. The other major causes of death in this age group were heart diseases (19.36%) followed by neoplasms (9.59%).

iv. 45 and above

Major portion of the deaths (66.98%) were occurred in this age group of 45 and above during the year under report as in the previous year (66.97%). Also 29.68% of the deaths in this age group were due to heart disease. The other significant causes of deaths in this age-group were cerebrovascular diseases (14.62%), Neoplasms (12.93%) diseases of the respiratory system (7.16%) and Nutritional and metabolic disease, immunity disorder (6.70%) and tuberculosis (5.57%).

2.5 Summary

1. Eventhough heart disease was the major killer disease in this city corporation during the year under report percentage of deaths due to this disease had reduced when compared to the previous year.
2. Heart disease was the majaan cause of death in the age group of 45 and above.
3. Cerebrovascular disease was the second major cause of death among the leading causes of death.
4. Deaths due to neoplasms had the third place among the major causes of death.
5. The most important cause of infant deaths was conditions originating in the perinatal period (56.30%)
6. The major causes of death in the age-group of 15-44 were accidents, injuries and poisoning.

Kozhikode Corporation

Kozhikode Corporation has an area of 83 Sq.km. with a population 3.94 lakhs as per 1981 census. The density of population was 4771 persons per sq.km. According to the Census of 1991 the population of this corporation comes to about 4.2 lakhs and the decadal increase was 9.9%.



3.2 During the year under report 4637 deaths reported were subjected to analysis. The male and female break-up of those cases during the year under report was 2962 and 1675 respectively.

3.3 Causes of death - Appendix IV

The deaths due to different causes are analysed below.

i. Intestinal infectious disease - Code I (001-009)

3.19% of the total deaths reported during the year under report were deaths due to intestinal infectious diseases. During the previous year, the percentage of deaths due to this disease was 3.77. Their male and female break-up during the year under report was 2.90% and 3.70% respectively.

ii. Tuberculosis - Code I (010-018)

There was a slight fall in deaths due to tuberculosis during the year under report when compared to the previous year. The percentage of deaths due to this disease was 2.83 with male and female break-up of 2.90 and 2.69 respectively.

iii. Other bacterial diseases - Code I (020-041)

Out of the total deaths share of deaths due to other bacterial disease was 5.48% as against 8.07% in the year 1989. There was fall in deaths due to this cause during the year under report when compared to the previous year. The male and female break-up of the category was 5.30% and 5.79% respectively.

iv. Viral disease - Code I (045-079)

Deaths due to viral disease constituted 3.47% of the total deaths with all among male (3.24%) and females (3.88%).

v. Neoplasms - Code II (140-239)

Neoplasms was one of the major causes of death which constituted 9.62% of the total deaths during the year under report. The deaths due to this disease was 8.44% in the year 1989. The male and female victims succumbed to the diseases were 10.09% and 8.78% respectively.

vi. Nutritional and metabolic disease and immunity disorder - Code III (240-279)

The proportion of deaths due to this cause was 2.46% during the year under report with male and female break-up of 2.67% and 2.09% respectively.

vii. Diseases of the nervous system and sense organs - Code VI (320-389)

The percentage of deaths reported due to this disease was 3.71 as against 4.02 in the year 1989. The male and female break-up of this category was 3.45% and 4.12% respectively.

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viii. Heart diseases - Code VII (390-429)

Like in Kochi Corporation, heart disease was the major cause of death in Kozhikode Corporation also. The proportion of deaths due to the cause was reduced comparatively. The percentage of death due to heart disease was 15.23 as against 18.22 in the previous year about 17.52% males succumbed to it and 11.16% females. The death tolls were more among males than females.

ix. Cerebrovascular diseases - Code VII (430-438)

Cerebrovascular disease was also a cause of great concern to this city corporation. The share of deaths due to this disease was 9.45 an against 9.23 in the previous year.

Disease of the respiratory system - Code VIII (460-519)

Death due to disease of the respiratory system was 7.16% with male and female break-up of 7.13% and 6.86% respectively.

xi. Disease of the digestive system - Code IX (630-676)

Deaths under this category accounted for 6.27% as against 3.59% in the previous year with death tolls among males (7.12%) and females (4.79%).

xii. Disease of the urinary system - Code X (580-629)

Deaths due to this disease accounted for 1.16% of the total deaths.

xiii. Conditions originating in the perinatal period - Code XV (760-779)

The deaths due to this disease stood second among the causes of death in this city corporation during the year under report. Out of the total reported deaths, 13.50% of the death was occurred due to this disease as against 12.42% during the previous year. The male and female break-up of deaths due to this disease was 11.66% and 16.78% respectively.

xiv. Signs, symptoms - ill defined conditions - Code XVI (780-799)

Deaths due to this disease in this corporation was very few only 0.30% of the total deaths were due to this disease.

xv. Accidents, injuries and poisoning - Code XVII (800-999)

11.15% of the reported death occurred was due to accidents, injuries and poisoning. The males were more affected by this cause than females. The male and female break-up of deaths due to this disease was 11.92% and 9.79% respectively.

xvi. Other causes

Causes other than those mentioned earlier constituted 5.02% of the total deaths with male and female break-up of 3.14% and 8.35% respectively.



3.4 Deaths according to age - Appendix-IV.

The causes of deaths classified according to age are examined below.

i. Below 1 year (infants)

Out of the total deaths reported, 23.35% of the deaths were among the infants (below 1 year). Major portion of the infant deaths happened due to conditions originating in the perinatal period (57.81%). The second important cause of death in this age group was bacterial disease (11.91%). The other major causes of death among the infants were disease of the respiratory system (9.61%) disease of the nervous system and sense organs (7.30%) and intestinal infections diseases (4.06%).

ii. 1-14 years.

The percentage of deaths in this age group was comparatively low showing 9.32% of the total deaths. Major portion of the deaths in this age group were due to the following causes (1) viral diseases (16.28%) (2) Accidents, injuries and poisoning (14.58%) (3) Intestinal infectious disease (12.96%) (4) Neoplasms (8.80%) (5) disease of the nervous system and sense organs (8.80%) (6) disease of the respiratory system (8.10%) (7) disease of the digestive system (6.48%).

iii. 15-44 years

Death in this age group accounted for 22% of the total deaths reported during the year under report. As in the previous year, accidents, injuries and poisoning scored the highest rank (24.51%) among the causes of deaths. The other important causes of deaths in this age-group were heart diseases (11.18%), Neoplasms (9.90%), diseases of the respiratory system (7.84%) cerebrovascular disease (7.65%) and disease of the digestive system (6.48%). Death due to causes other than those mentioned above were 14.71%.

iv. 45 and above

Share of deaths in the age-group of 45 and above was 45.33% during the year 1990 as against 47.27% in the previous year. As in Kochi Corporation there was fall in the percentage of death due to heart diseases, during the year under report. Deaths due to this disease were 27.59% during the year under report as against 32.19% in the year 1989. The second place was occupied by cerebrovascular disease (16.65%). The other important causes of death in this age group are neoplasm (14.41%), accidents, injuries and poisoning (9.61%) disease of the digestive system (8.51%) and diseases of the respiratory system (5.38%).

3.5 Summary

1. Despite a fall in to the number of deaths due to heart diseases as Kochi Corporation, it was the major cause of death in Kozhikode Corporation during the year.
2. The major cause of infant deaths were the conditions originating in the perinatal period.
3. The second major causes of deaths in the age-group of 45 and above were cerebrovascular diseases.

4. In the age-group of 15-44, accidents injuries and poisoning stood first among the major causes of deaths.

KOLLAM MUNICIPALITY

As per 1981 census, population of Kollam Municipality is 1.38 lakhs with an area of 18 Sq.km. The density of population of the town was 7464 Sq.km. The causes of death regarding 1522 cases of medically certified deaths are analysed below.

4.2 Sex-wise distribution of the leading causes of death (Appendix IV).

Out of the 1522 reported deaths 993 (65.24%) were males and 529 (34.76%) females.

i. Intestinal infections diseases - Code (001-009)

Only a small portion of the deaths 1.84% was due to intestinal infections diseases with male and female break-up of 1.61% and 2.27% respectively.

ii. Tuberculosis - Code I (010-018)

The share of death due to tuberculosis was 4.27%. The incidence on males was 4.73% and on females 3.40%.

iii. Other bacterial diseases - Code I (020-041)

The portion of deaths due to other bacterial disease was 3.29% with male and female break-up 2.32% and 5.10% respectively.

iv. Viral disease - Code I (045-079)

Share of deaths due to viral disease was very small (0.53%) when compared to other major diseases.

v. Neoplasm - Code II (140-234)

This cause claimed 4.14% of lives. The percentage share of male deaths (4.43%) was higher than female death (3.59%).

vi. Nutritional and metabolic disease and immunity disorder - Code III (240-279)

Deaths due to this disease were nearly 5% with male and female break-up of 4.53% and 5.86% respectively.

vii. Diseases of the nervous system and sense organs - Code VI (320-389)

4.80% of the total deaths was due to this disease. The females (5.29%) were more affected than males (4.53%).

viii. Heart disease - Code VII (390-429)

Heart disease was the major killer in this Municipality also. It took toll of 29.76% (males 30.93% and female 27.6%) during the year under report.



ix. Cerebrovascular diseases - Code VII (430-438)

Another major causes of death in the municipality were Cerebrovascular diseases accounting for 8.74% the deaths. It affected females (10.4%) more than males (7.85%).

x. Disease of the respiratory system - Code VIII (460-519)

Deaths due to this disease ranked second among the major causes of deaths. The percentage of deaths due to this disease was 13.01%. The male victim were 13.49% and female victims 12.10%.

xi. Disease of the digestive system - Code IX (520-579)

4.53% of the total deaths was due to disease of the digestive system.

xii. Disease of the urinary system - Code X (580-629)

The share of deaths due to disease of the Urinary system was 4.34%.

xiii. Certain conditions originating in the perinatal period - Code XV (760-779)

This was also a major cause of deaths in this municipality. About 6.24% of the total deaths was due to this disease. The male and female break-up in this item was 6.14% and 4.43% respectively.

xiv. Injury and poisoning - Code (800-999)

4.66% of the death was due to injury and poisoning.

xv. Signs, symptoms of ill defined conditions - Code XVI (780-799)

The percentage of death due to this diseases was only 0.33.

xvi. Others

4.53% of the total death was due to other causes not mentioned earlier.

4.3 Age-wise analysis of the mortality is attempted below.

i. Infant deaths.

Out of the total deaths percentage of deaths below 1 year was 12.88% in this municipality. As in the other two corporations, the major cause of death in this age group was certain conditions originating in the perinatal period (48.47%). Deaths due to this diseases (14.8%) of the system ranked second in this municipality. The share of deaths due to other bacterial diseases and heart diseases was same accounting for 12.24% each. Deaths due to intestinal infectious diseases constituted 5.10% of the total deaths.

ii. 1-14 years

Out of the total deaths, 4.80% of the deaths were occurred in this age group. This group was severely affected by the diseases of the respiratory system (30.14%) followed by the disease of the nervous system and sense organs (24.66%). The other important causes of deaths in this age group were heart disease (12.33%), diseases of the digestive system (6.84%) intestinal infections diseases (5.48%) and other bacterial diseases (5.48%).

iii. 15-44 years

Percentage share of deaths in this age group was 12.08%. Accidents, injuries and poisoning stood first among the causes of deaths in this age-group.

The percentage of deaths due to this cause was 22.28%. Another major causes of death in this age group was heart disease which took toll of 20.65%. In this age group, the diseases of the respiratory system also contributed a share of 10.34%.

iv. Above 45 years

More than 70% of the deaths were happened in the age group of 45 and above. Heart diseases (35.72%) dominated the diseases afflicting this age-group. Deaths due to diseases of the respiratory system and Cerebrovascular diseases were 11.96% and 11.04% respectively. The other important causes of deaths in this age group were nutritional and metabolic disease and immunity disorder (6.44%), Tuberculosis (5.24%), diseases of the urinary system (5.24%) Cerebrovascular diseases (5.14%) and neoplasms (5.05%).

4.4 Summary.

1. Heart disease was the major killer disease in this municipality also, especially in the age group of 45 and above.

2. The diseases of the respiratory system stood second among the leading causes of deaths in Kollam municipality.

3. Diseases of the respiratory system ranked first in the age group of 1-14 years where as certain conditions originating in the perinatal period dominated in the age group of below 1 year.

4. Diseases of the respiratory system were one of the major causes of deaths in all the age groups in this municipality.

5. Accidents injuries and poisoning predominated as the major cause of death in the age group 15-44 years.

5.1 Comparative study of the leading causes of deaths in the centres.

1. The details of comparisons of leading causes of deaths in respect of the two centres are given in appendix VIII.

2. The heart disease was the most important killer disease among the three centres Kochi, Kozhikode and Kollam.



3. The decline in proportion of deaths due to heart diseases in the two city corporations was desirable when compared to the previous year (1989).

4. The highest percentage of deaths due to heart diseases was in Kollam Municipality and lowest in Kozhikode Corporation.

5. In all the three centres, males were more affected by heart diseases than females.

6. Cerebrovascular diseases inflicted both males and females severely in all the three centres.

7. Neoplasms were also one of the major diseases leading to death in all the three centres.

8. One of the major causes of deaths among infants was conditions originating in the perinatal period and the female infants were more affected.

9. Disease of the respiratory system were more in Kollam Municipality than other two city/corporations.

10. Deaths due to other bacterial diseases were higher in Kozhikode Corporation.

11. The percentage share of deaths due to accidents injuries and poisoning was not negligible especially in the age group of 15-44.

6. Conclusion.

As usual, heart diseases seemed to be the major killer disease in all the three centres during the year under report also. But the proportion of deaths due to heart diseases showed a decline in the two centres - Kochi and Kozhikode when compared to the previous year. The conditions originating in the perinatal period were the important causes for infant deaths and this was highest in Kozhikode Corporation. Cerebrovascular diseases and neoplasm also proved to be the important causes of deaths in all the three centres.

APPENDIX - I

SEX-WISE DETAILS OF MEDICALLY CERTIFIED DEATHS IN

KOCHI CORPORATION

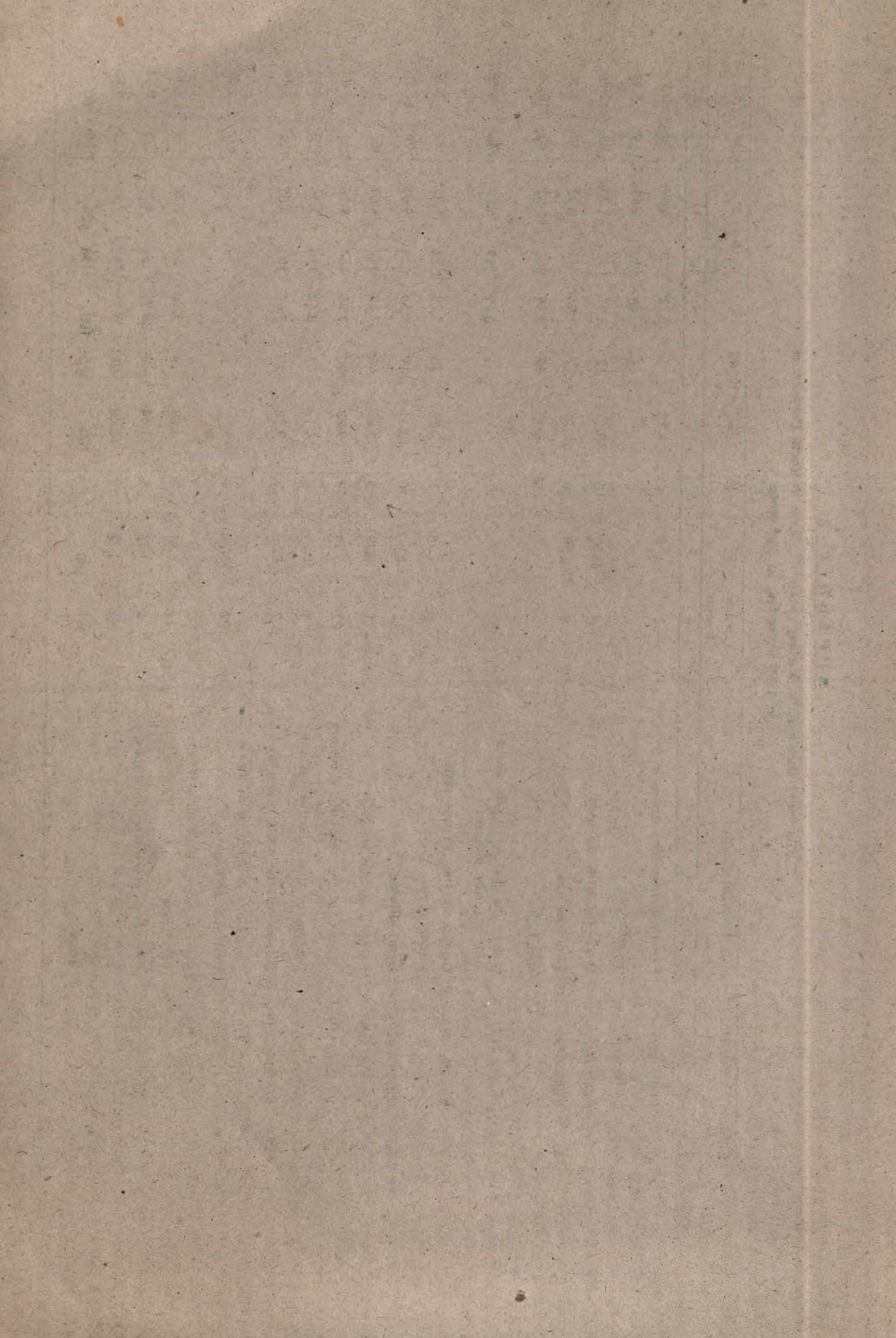
Statement showing Cause of Death in 1990 according to sex and age

Sl.No.	Code No.	Cause of Death	Male	Female	Percentage	Total	Percentage
1	2	3	4	5	6	7	8
				Age		Age	Age
1.	I(001-009)	Intestinal Infectious diseases	23	7	1.10	30	0.64
2.	I(101-018)	Tuberculosis	128	37	6.10	165	3.39
3.	I(020-041)	Other bacterial disease	48	40	2.29	88	3.67
4.	I(045-079)	Viral diseases	23	12	1.10	35	1.10
5.	II(140-239)	Neoplasms	224	116	10.67	340	10.66
6.	III(240-279)	Nutritional and metabolic diseases and immunity diseases	93	53	4.43	146	4.58
7.	VI(320-389)	Diseases of the nervous system and Sense organs	29	26	1.38	55	1.72
8.	VII(390-429)	Heart diseases	524	254	24.96	778	23.30
9.	VIII(430-438)	Cerebrovascular diseases	242	120	11.53	362	11.35
10.	VI(460-519)	Disease of the respiratory system	130	75	6.19	205	6.43
11.	IX(520-679)	Disease of the digestive system	127	45	6.05	172	5.39
12.	X(580-629)	Disease of the urinary system	92	32	4.38	124	3.89
13.	XVI(760-779)	Conditions originating in the perinatal period	106	86	5.05	192	6.02
14.	XVI(780-799)	Signs, symptoms of ill defined conditions	66	33	3.14	99	3.10
15.	XVII(800-999)	Accidents, injuries & poisoning	190	85	9.05	275	8.63
16.	XVII(800-999)	Others	54	69	2.58	123	3.86
		TOTAL	2099	1090	100	3189	100

A P P E N D I X - II

Statement showing the leading causes of death in Kochi Corporation in 1990 according to age group

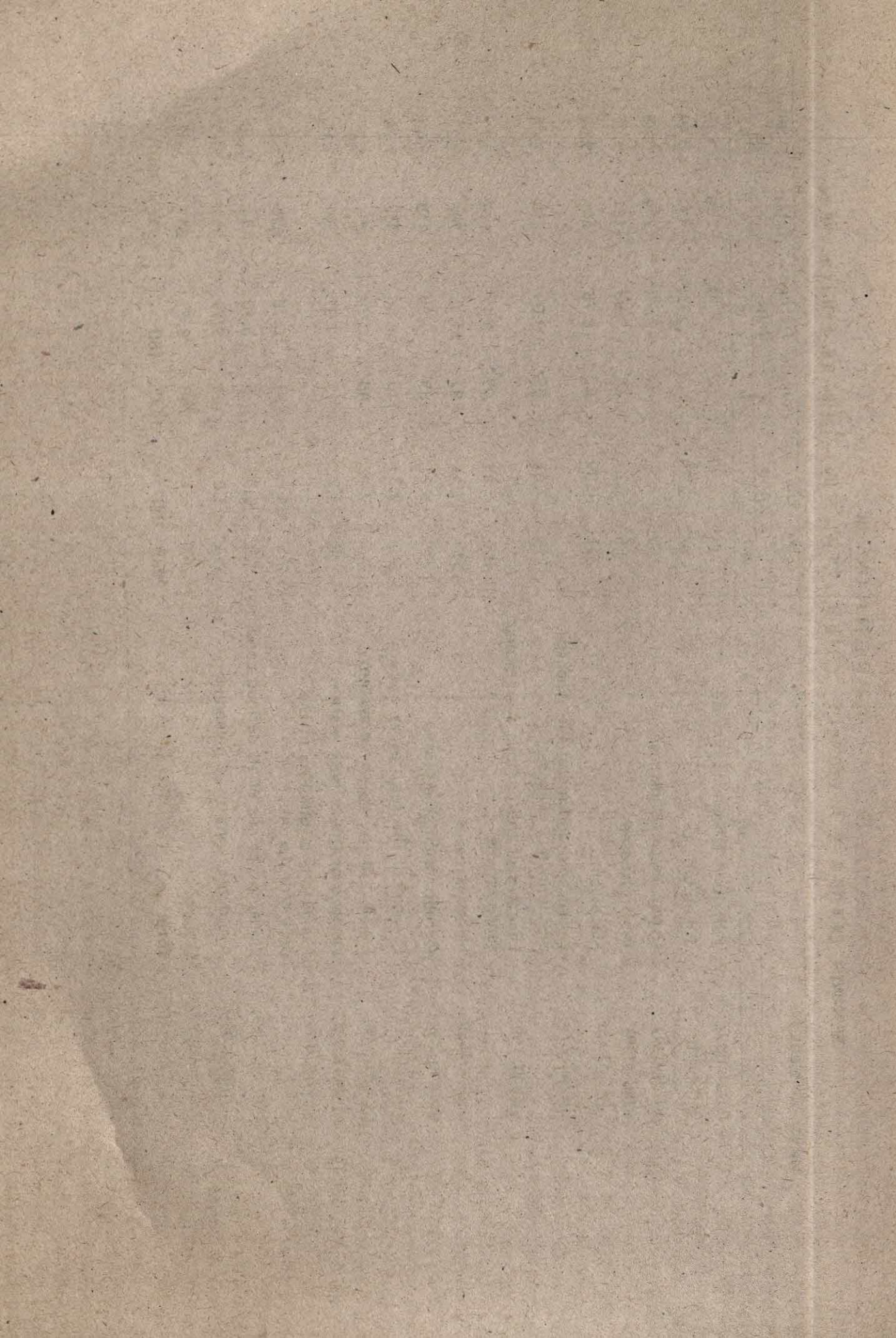
Sl.No.	Code No.	Cause of death	Be.ow %										Total	%
			4	5	6	7	8	9	10	11	12	13		
1.	I(001-009)	Intestinal Infectious diseases	2	0.59	4	4.12	5	0.82	19	0.89	30	0.94		
2.	I(010-018)	Tuberculosis	-	-	-	-	46	7.48	119	5.57	165	5.17		
3.	I(020-041)	Other bacterial diseases	29	8.50	10	10.31	12	1.95	37	1.73	88	2.76		
4.	I(045-079)	Viral diseases	2	0.59	10	10.31	12	1.95	11	0.52	35	1.10		
5.	II(140-239)	Neoplasms	-	-	5	5.15	59	9.59	276	12.92	340	10.66		
6.	III(240-279)	Nutritional and metabolic disease and immunity diseases	-	-	-	-	3	0.49	143	6.69	146	4.58		
7.	VI(320-389)	Disease of the nervous system & sense organs	6	1.76	7	7.22	20	3.25	22	1.03	55	1.72		
8.	VII(390-429)	Heart disease	15	4.40	10	10.31	119	19.35	634	29.68	778	24.40		
9.	VIII(430-438)	Cerebrovascular diseases	1	0.29	3	3.09	46	7.48	312	14.61	362	11.35		
10.	VI(460-519)	Disease of the respiratory system	23	6.74	9	9.28	20	3.25	153	7.16	205	6.43		
11.	IX(520-579)	Disease of the digestive system	1	0.29	4	4.12	53	8.62	114	5.34	172	5.39		
12.	X(580-629)	Disease of the urinary system	2	0.59	9	9.28	10	1.63	103	4.82	124	3.89		
13.	XV(700-779)	Conditions Originating in the perinatal period	192	56.30	-	-	-	-	-	-	192	6.02		
14.	XVI(780-799)	Signs, Symptoms of ill defined conditions	13	3.81	3	3.09	24	3.90	59	2.76	99	3.10		
15.	XVII(800-999)	Accidents injuries and poisoning	6	1.76	11	11.34	166	26.99	92	4.31	275	8.63		
16.		Others	49	14.38	12	12.38	20	3.25	42	1.97	123	3.86		
		Total	341	100	97	100	615	100	2136	100	3189	100		



APPENDIX - III

SEX-WISE DETAILS OF MEDICALLY CERTIFIED DEATHS IN KOZHIKODE CORPORATION

Sl.No.	Code No.	Cause of Death	Male		Female		Total	Percentage	
			4	5	6	7		8	9
1.	I(001-009)	Intestinal Infectious diseases	86	2.90	62	3.70	148	3.19	3.19
2.	I(101-018)	Tuberculosis	86	2.90	45	2.69	131	2.83	2.83
3.	I(020-041)	Other bacterial disease	157	5.30	97	5.79	254	5.48	5.48
4.	I(045-079)	Viral diseases	96	3.24	65	3.88	161	3.47	3.47
5.	II(140-239)	Neoplasms	299	10.09	147	8.78	446	9.62	9.62
6.	III(240-279)	Nutritional and metabolic diseases and immunity diseases	79	2.67	35	2.09	114	2.46	2.46
7.	VI(320-359)	Diseases of the nervous system and sense organs	103	3.48	69	4.12	172	3.71	3.71
8.	VII(390-429)	Heart diseases	519	17.52	187	11.16	706	15.23	15.23
9.	VII(430-438)	Cerebrovascular diseases	273	9.21	165	9.85	438	9.45	9.45
10.	VII(460-519)	Disease of the respiratory system	217	7.33	115	6.86	332	7.16	7.16
11.	IX(520-579)	Disease of the digestive system	211	7.12	80	4.79	291	6.27	6.27
12.	X(580-629)	Disease of the urinary system	36	1.22	13	1.07	54	1.16	1.16
13.	XV(760-779)	Conditions originating in the perinatal period	345	11.66	281	16.78	626	13.50	13.50
14.	XVI(780-799)	Signs, symptoms of ill defined conditions	9	0.30	5	0.30	14	0.30	0.30
15.	XVII(800-999)	Accidents, injuries & poisoning	353	11.92	164	9.79	517	11.15	11.15
16.		Others	93	3.14	140	8.35	233	5.02	5.02
		Total	2962	100	1675	100	4637	100	100



A P P E N D I X - I V

STATEMENT SHOWING THE LEADING CAUSES OF DEATH IN KOZHIKODE CORPORATION
IN 1990 ACCORDING TO AGE GROUP

Sl.No.	Code No.	Cause of death	Below 1 year										Total	%
			4	5	6	7	8	9	10	11	12	13		
1.	I(001-009)	Intestinal infectious diseases	44	4.05	56	12.96	14	1.37	34	1.62	148	3.19		
2.	I(010-018)	Tuberculosis	4	0.37	18	4.17	41	4.02	68	3.24	131	2.83		
3.	I(020-041)	Other bacterial diseases	129	11.91	33	7.64	44	4.31	48	2.28	254	5.48		
4.	I(045-079)	Viral diseases	12	1.11	66	15.28	43	4.71	35	1.67	161	3.47		
5.	I(140-239)	Neoplasms	4	0.37	38	8.80	101	9.90	303	14.41	446	9.62		
6.	I(240-279)	Nutritional and metabolic disease and immunity diseases	2	0.18	1	0.23	18	1.76	33	4.42	114	2.46		
7.	VI(320-389)	Disease of the nervous system and sense organs	79	7.30	38	8.80	35	3.43	20	0.95	172	3.71		
8.	VIII(390-429)	Heart disease	3	0.28	9	2.03	114	11.18	530	27.59	706	15.23		
9.	VII(430-438)	Cerebrovascular diseases	3	0.28	7	1.62	78	7.65	350	16.65	430	9.45		
10.	VIII(460-519)	Disease of the respiratory system	104	9.61	35	8.10	80	7.84	113	3.38	332	7.16		
11.	IX(520-579)	Disease of the digestive system	19	1.75	28	6.48	65	5.38	179	8.51	291	6.27		
12.	X(580-629)	Disease of the urinary system	6	0.55	6	1.39	23	2.25	19	0.90	84	1.16		
13.	XV(760-779)	Condition originating in the perinatal period	626	57.81	-	-	-	-	-	-	626	13.50		
14.	XVI(780-799)	Signs, symptoms of ill defined conditions	-	-	1	0.23	4	0.39	9	0.43	14	0.30		
15.	XVII(800-999)	Accidents injuries and poisoning	2	0.18	63	14.58	250	34.52	202	9.61	517	11.15		
16.		Others	46	4.25	33	7.64	105	10.29	49	2.34	233	5.02		
		Total.	1083	100	432	100	1020	100	2102	100	4637	100		

APPENDIX - V

Sex-wise Details of Medically certified deaths in Kollam Municipality

Sl.No.	Code No.	Cause of Death	Male		Female		Total	Percentage	
			4	5	6	7		8	9
1.	I(001-009)	Intestinal Infectious diseases	16	1.61	12	2.27	28	1.84	
2.	I(010-018)	Tuberculosis	47	4.73	18	3.40	65	4.27	
3.	I(020-041)	Other bacterial disease	23	2.32	27	5.10	50	3.29	
4.	I(045-079)	Viral diseases	3	0.30	5	0.95	8	0.53	
5.	II(140-239)	Neoplasms	44	4.43	19	3.59	63	4.14	
6.	III(240-279)	Nutritional and metabolic diseases and immunity diseases	45	4.53	31	5.86	76	4.99	
7.	VI(300-389)	Diseases of the nervous system and sense organ	45	4.53	28	5.29	73	4.80	
8.	VII(390-429)	Heart diseases	307	30.93	146	27.60	453	29.76	
9.	VII(430-438)	Cerebrovascular diseases	78	7.85	55	10.40	133	8.74	
10.	VIII(460-519)	Disease of the respiratory system	134	13.49	64	12.10	198	13.01	
11.	IX(520-579)	Disease of the digestive system	49	4.93	20	3.78	69	4.53	
12.	X(580-629)	Disease of the urinary system	44	4.43	22	4.16	66	4.34	
13.	XV(760-779)	Conditions originating in the perinatal period	61	6.14	34	6.43	95	6.24	
14.	XVI(780-799)	Signs, symptoms of ill defined conditions	2	0.20	3	0.57	5	0.33	
15.	XVII(800-999)	Accidents, injuries and poisoning	52	5.24	19	3.59	71	4.66	
16.		Others	43	4.34	26	4.91	69	4.53	
		Total	993	100	529	100	1522	100	

1. The first part of the document discusses the general principles of the proposed system. It outlines the objectives and the scope of the project, emphasizing the need for a comprehensive and integrated approach to the problem at hand.

2. The second part of the document provides a detailed description of the system's architecture. It details the various components and their interactions, highlighting the modular and scalable nature of the design.

3. The third part of the document presents the results of the initial testing and evaluation. It includes a comparison of the proposed system against existing solutions, demonstrating its superior performance in terms of efficiency and reliability.

4. The fourth part of the document discusses the implementation and deployment of the system. It outlines the key challenges and the strategies used to overcome them, ensuring a smooth and successful transition from development to production.

5. The fifth part of the document concludes with a summary of the findings and a discussion of the future work. It identifies the areas for further research and development, aiming to enhance the system's capabilities and address any remaining issues.

6. The sixth part of the document provides a detailed description of the system's architecture. It details the various components and their interactions, highlighting the modular and scalable nature of the design.

7. The seventh part of the document presents the results of the initial testing and evaluation. It includes a comparison of the proposed system against existing solutions, demonstrating its superior performance in terms of efficiency and reliability.

8. The eighth part of the document discusses the implementation and deployment of the system. It outlines the key challenges and the strategies used to overcome them, ensuring a smooth and successful transition from development to production.

9. The ninth part of the document concludes with a summary of the findings and a discussion of the future work. It identifies the areas for further research and development, aiming to enhance the system's capabilities and address any remaining issues.

APPENDIX - VII

Comparative study of leading causes of death in Corporation of Kochi and Kozhikode

Sl.No.	Cause of Death	Kochi		Kozhikode	
		1989 %	1990 %	1989 %	1990 %
1	2	3	4	5	6
1.	Heart diseases	35.57	24.40	18.22	15.23
2.	Cerebrovascular diseases	10.89	11.35	9.23	9.45
3.	Neoplasms	9.16	10.66	8.44	9.62
4.	Perinatal causes	6.06	6.02	12.42	13.50
5.	Disease of the respiratory system	5.88	6.43	8.59	7.16
6.	Tuberculosis	3.74	5.17	3.94	2.83
7.	Other bacterial disease	3.22	2.76	8.07	5.48
8.	Intestinal Infectious disease	0.68	0.94	3.77	3.19

APPENDIX - VIII

**Sex-wise Comparative Study of Leading Causes of Deaths in the Centre
During 1989 & 1990**

Sl.No.	Cause of Death	Kochi		Kozhikode					
		1989 Male %	1990 Female %	1989 Male %	1990 Female %				
1	2	3	4	5	6	7	8	9	10
1.	Heart disease	36.79	32.86	24.96	23.30	19.80	15.42	17.52	11.16
2.	Cerebrovascular disease	10.05	12.76	11.53	11.01	8.90	9.81	9.21	9.83
3.	Neoplasms	9.21	9.04	10.67	10.64	9.04	7.39	10.09	8.78
4.	Perinatal causes	5.18	8.04	5.05	7.89	11.45	14.15	11.66	16.78
5.	Disease of the Respiratory system	5.85	5.93	6.19	6.88	8.31	9.06	7.33	6.86
6.	Tuberculosis	4.74	1.51	6.10	3.39	4.60	2.77	2.90	2.69
7.	Other bacterial diseases	3.13	3.42	2.28	3.67	7.14	9.70	5.30	5.79
8.	Intestinal Infectious diseases	0.53	1.00	1.10	0.64	3.52	4.22	2.90	3.70
9.	Accidents, injuries and poisoning	8.45	8.14	9.05	7.80	8.25	6.24	11.93	9.79

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