



GOVERNMENT OF KERALA

DIRECTORATE OF ECONOMICS AND STATISTICS
KERALA

**MEDICAL CERTIFICATION OF
CAUSE OF DEATH
1977**

REPORT No. 12

POPULATION DIVISION
VITAL STATISTICS UNIT-1981

DIRECTORATE OF ECONOMICS
KERALA



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P R E F A C E

In Kerala State, the scheme on medical certification of cause of death is in operation in the Corporations of Trivandrum, Cochin and Calicut and two major municipalities of Quilon and Alleppey. The scheme envisages the collection of data relating to causes of death certified by the attending physicians in the hospitals. This combined report on causes of death medically certified in the hospitals in the five urban centres for the year 1977 is 12th in the series.

The causes of death, certified by the medical practitioners in the hospitals are identified and coded according to list 'A' 150 causes of International Classification of Diseases (1965 Revision Vol. I). This is done by the Deputy Health Officers in the respective centres. This report is based on the individual reports received from the Deputy Health Officers. The following persons worked as Deputy Health Officers in the five centres during the period.

1. Trivandrum	..	R. Raveendranathan Nair
2. Cochin	..	P. Vasudevan
3. Calicut	..	M. Sreeraman
4. Quilon	..	P. A. Kunjamutty
5. Alleppey	..	P. K. Pankajakshan

This report will help the study of changing pattern of mortality. Public health planners and medical professionals and research workers may also find this report useful. However, while using the results of this study, it may be kept in mind that this report pertains mainly to institutional deaths reported by the medical practitioners in the five urban areas. These deaths, form only a small percentage of total deaths in the community. Therefore, generalisation on the basis of this report has to be made cautiously.

This report has been prepared by the Model Registration Unit in the Directorate.

Trivandrum.
30-6-1981.

DR. P. A. NAIR,
Director.

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1.1 Introduction

In modern times the study of mortality is of great importance to public health workers and demographers throughout the world. The success of health planning and planning for improvement of socio-economic conditions depends to a great extent on the current data on mortality and its future trends. Mortality data are needed in population projections also. They are indispensable for developing and maintaining a social security system.

The Scheme on 'Medical Certification of cause of Death' has been introduced in the State at the instance of the Government of India with a view to get reliable and accurate statistics on cause of death which occurred in the hospitals in selected centres.

In our State the scheme is in operation in the Corporations of Trivandrum, Cochin and Calicut and the major municipalities of Quilon and Alleppey. A Deputy Health Officer has been appointed in each of these local bodies for the organisation and efficient implementation of the scheme. He is Paramedical Officer with special training on the collection and compilation of cause of death statistics. He is assisted by one Research Assistant and two Compilers.

Institutional deaths certified by the attending medical practitioners in the five centres during the year 1977 are analysed in this report.

1.2 Objectives

The broad objectives of the scheme are the following:—

1. To obtain reliable information on the underlying causes of death.
2. To pin-point the leading causes of death for males and females
3. To identify individual causes of death in certain special groups like infants, mothers and aged persons.
4. To study the mortality pattern of certain important diseases like tuberculosis, cancer, etc.
5. 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 concerned municipal/corporation area having facilities for inpatient treatment. The attending physician is required to furnish the data on cause of death in the prescribed form given in

Appendix I of this report. The causes of death certificates received from the medical institutions are scrutinized and the causes are identified and coded by the Deputy Health Officer. For the purpose of coding the causes of death, the list 'A' of the International Classification of diseases (1965 Revision Vol. I) is followed.

1.4 Causes of death

As a result of the successful implementation of the disease control and eradication programmes, death rate in the State has considerably declined. The major 'Killer diseases' like malaria, cholera, plague and small-pox have been significantly controlled. However, several other diseases have taken their place as the leading causes of death. This shows that the morbidity pattern is fast changing.

In this report, the causes of death which account for 4% or more deaths in each individual centre are separately analysed. The causes of death which are insignificant to be taken separately are grouped under 'others'.

1.5. Domiciliary deaths

This report is mainly intended to analyse the causes of death reported from the medical institutions by the attending physicians. Deaths occurred to normal residents at home do not come under the purview of this report. But the causes of death reported from the medical institutions may not be representative of the community and the leading causes of domiciliary deaths may not be the same as those of hospital deaths. Therefore we have attempted in this report to extend the coverage by collecting 10% of the domiciliary deaths occurred in each ward during the year under report. The details of these deaths were collected on a sample basis from the normal registration records and the causes of such deaths were derived by symptomatic method in consultation with the Health Officer of the city after visiting the houses concerned.

It may be noted that this investigation into the causes of domiciliary deaths is not envisaged in the scheme.

1.6 Limitations of the report

The data analysed in his report cover mainly institutional death reported by the attending physicians. Deaths occurring to normal residents as well as outsiders, who come to the city hospitals to avail better medical facilities are included in this. Thus the institutional deaths constitute only a small portion of total deaths in the concerned areas. Further the domiciliary deaths included are not medically certified.

This report analyses the causes of death medically certified in the individual cities separately. An attempt is also made for an inter-city comparison of mortality due to major diseases.

2.1 Report on Medical Certification of causes of death in Trivandrum Corporation 1977

Causes of death regarding 2682 deaths are analysed in this report. The following diseases account for 4% or more deaths in the city hospitals during the year 1977.

1. Enteritis and other diarrhoeal diseases (A 5)
2. Tuberculosis (A 6-10)
3. Neoplasms (A 45-61)
4. Meningitis (A 72)
5. Heart diseases (A 81-84)
6. Pneumonia (A 92)
7. Causes of perinatal morbidity and mortality (A 131-135)

2.2 Sex-wise distribution of deaths due to leading causes

Table 1 (1) gives the sex-wise distribution of deaths due to major causes. Out of 2682 mortality cases reported from the hospitals in the city, 1578 (58.8%) are to males and 1089 (40.6%) to females. Sex is not reported for 15 cases (0.6%).

1. *Enteritis and other diarrhoeal diseases* (A 5)

6.12% of deaths reported are due to this set of diseases. Male and female deaths come to 6.27% and 5.97% respectively.

2. *Tuberculosis* (A 6-10).

Tuberculosis account for 4.51% of deaths. Male deaths out number female deaths; the percentage of death being 4.94 and 3.95 respectively.

3. *Neoplasms* (A 45-61)

Deaths due to Neoplasms form 7.09% of deaths reported during the year. 6.84% of male deaths and 7.53% of female deaths are due to this diseases.

4. *Meningitis* (A 72)

This disease accounts for 4.21% of deaths. The percentage of male deaths (4.50%) is higher than that of female deaths (3.77%).

5. *Heart diseases* (A 81-84)

15.21% of deaths are due to this disease alone. This is the topmost cause of death during the year. Male victims of this disease are found to be much more than female victims.

6. *Pneumonia* (A 92)

This disease is found to be responsible for 4.18% of deaths during 1977. Percentage of female deaths is higher than that of male deaths.

7. *Causes of perinatal morbidity and mortality* (A 131-135).

Perinatal mortality includes still births and first week deaths. 9.17% of deaths are due to causes of perinatal morbidity and mortality alone. Male deaths are more than female deaths.

Diseases of digestive system (A 104) and accidents (A 138-150) claim more than 4% of deaths each, among males.

2.3 Age-wise distribution of deaths due to leading causes

It is noted that the degree of resistance to diseases varies from age to age. Age-wise analysis of mortality will help the identification of age affinity of diseases. This analysis is attempted in 10 age segments from infants to 75 years and above.

Table I (2) shows the age-wise distribution of deaths due to leading causes.

0-1 (*infant death*):—

This age group claims 21.5% of total deaths reported from the medical institutions during the year. The most outstanding cause of infant death is causes of perinatal morbidity and mortality. 40.45% of deaths are due to this, alone. Meningitis, enteritis and other diarrhoeal diseases and bacterial diseases claim; 7.67%, 7.34% and 6.97% of deaths respectively. Pneumonia which claims 6.66% of deaths is another significant cause of death found among infants.

1-4:—Deaths in this age group form 14.5% of total deaths. Enteritis and other diarrhoeal diseases group alone claims 17.23% of deaths in this age-group. Other notable causes of death are diseases of nervous system and sense organs and pneumonia. These two diseases account for 9.51% and 9.00% of deaths respectively.

5-14:—8.4% of deaths are seen to have occurred in this age group. Tuberculosis with 9.79% of deaths to its credit tops the list of leading causes of death. This is followed by diseases of nervous system and sense organs (9.34% of death), enteritis and other diarrhoeal diseases (8.45%) and accidents (8%). Deaths due to heart diseases, diseases of digestive system and meningitis are also to be noted.

15-24:—This age group claims 5.2% of total deaths. The most outstanding cause of death in this age group is heart diseases. This disease group

alone claims 15.11% of deaths. Deaths due to accidents form 12.96%. Other significant causes of deaths in this age group are neoplasm and diseases of digestive system.

25-34. 5.4% of deaths come under this age-group. As in the case of the previous age-group heart disease is the number one killer disease in this age-group too. Deaths due to heart diseases along constitute 15.97% of deaths in this age group. Accidents claim 9.72% of deaths. Other significant causes of death in this age-group are neoplasms, anaemias, meningitis, enterities and other diarrhoeal diseases and diseases of digestive system.

35-44. Deaths in this age group constitute 5.6% of the total reported deaths. In this age-group also heart diseases group tops as the leading cause of death. 14.97% of deaths are due to heart diseases alone. This is followed by neoplasms with 11.83% of deaths to its credit. Tuberculosis with 8.65% of deaths occupies third rank as the major causes of death. Accidents, diseases of digestive system and diabetes mellitus are also to be noted.

45-54. Deaths in this age group form 8.5% of total deaths, heart diseases alone claim 26.05% of deaths occurred in this age group. The second major cause of death is neoplasms with 16.80% of deaths. Tuberculosis and diseases of digestive system claim 6.73% of deaths each. Diabetes mellitus, anaemias and cerebrovascular diseases are other leading causes of death in this age group.

55-64. 13.6% of total deaths are found to have occurred in this age group. Heart diseases is the number one killer in this age group also. About 1/3 of the deaths occurred in this age group are due to heart diseases alone. Neoplasms ranks second as the leading cause of death in this age group. Cerebrovascular diseases, diabetes mellitus and tuberculosis are other prominent causes of death.

65-74. This age group claims 8.13% of total deaths. Deaths due to heart diseases alone constitute 30.73%. Cerebrovascular disease, diabetes mellitus, neoplasms, bronchitis, emphysema and asthma are also to be noted as leading causes of death in this age group.

75 and above. 3.3% of deaths are found to have occurred in this age group. Heart diseases alone are responsible for 33.33% of deaths in this age group. Neoplasms, cerebrovascular diseases, bronchitis, emphysema and asthma, diabetes mellitus, enteritis and other diarrhoeal diseases and pneumonia are other important causes of death in this age group.

2.4 Religion-wise distribution of deaths due to leading causes

Table I (3) shows the religion-wise distribution of deaths due to leading causes.

Out of the 2682 deaths reported from the city hospitals, 74.76% are to hindus, 12.75 % to christians and 11.04% to muslims. Religion is not reported in the case of 39 deaths.

The most outstanding cause of death among Hindus is heart diseases. This is followed by causes of perinatal morbidity and mortality, neoplasms and enteritis and other diarrhoeal diseases.

Among christians also the top most cause of death reported is heart diseases. Causes of perinatal morbidity and mortality occupies second rank as the killer disease. Neoplasms and enteritis and other diarrhoeal diseases and tuberculosis are also important diseases among christians during the year.

Heart disease is the number one killer disease among muslims also. Causes of perinatal morbidity and mortality, neoplasms, meningitis, enteritis and other diarrhoeal diseases are also significant.

It may be noted that the first and second causes of death among all the three religions are heart diseases and causes of perinatal morbidity and mortality respectively. Percentage of death due to tuberculosis is comparatively lower among muslims. Similarly mortality due to meningitis is found to be lower among christians during the year. The percentage of deaths due to meningitis is found to be lower among christians during the year. The percentage of deaths due to meningitis is found to be comparatively higher among muslims during the year.

2.5 Domiciliary death

Table I(4) furnishes the data regarding domiciliary deaths.

Details regarding 175 domiciliary deaths are collected. Out of the 66 deaths among hindus, 11 deaths are due to gastro enteritis alone. Paralysis of cerebral apoplexy accounts for 10 deaths. Tuberculosis, senility, asthma and hyperplasia of prostate are other important causes of domiciliary deaths.

Out of 60 deaths among christians, 10 deaths are due to senility alone. Tuberculosis, drowning and heart diseases are other principal causes of domiciliary deaths reported among christians.

Out of the 175 deaths, 49 deaths are among muslims. Tuberculosis, senility and hyperplasia of prostate are the main causes of death reported.

2.6 Summary of findings

The principal findings of the above analysis are the following:—

1. The first major cause of death reported from the city hospitals during the year is heart disease. This is so among both the sexes.

2. Infant deaths constitute 21.5% of total deaths. Out of this 40.45% deaths are due to causes of perinatal morbidity and mortality alone. Morbid horror from these disease are comparatively higher among male infants. Meningitis, enteritis and other diarrhoeal diseases and pneumonia are also to be noted as major causes of death among infants.

3. From the age group 15-24 onwards heart diseases predominate as the number one killer disease.

4. The percentage of death due to accidents is the highest in the age-group 15-24.

5. Above 35 years, diabetes mellitus is found as an important cause of death. However, the percentage of total deaths due to this disease is below 4%.

6. Among all the three religions heart diseases are the first major cause of death.

7. During the year deaths due to heart diseases, tuberculosis, meningitis, diseases of digestive system, enteritis and other diarrhoeal diseases and accidents are found to be more among males.

8. Mortality due to pneumonia, avitaminoses and other nutritional deficiency, neoplasms and diabetes mellitus is found to be more among females.

9. Tuberculosis, senility, gastro enteritis, paralysis of cerebral apoplexy, hyperplasia of prostate are the main causes of domiciliary deaths.

APPENDIX—I

KERALA STATE

Corporation/Municipality

MEDICAL NOTIFICATION OF DEATH

<i>Name of deceased</i>	<i>Sex</i>	<i>Occupation</i>	<i>Religion</i>	<i>Date of birth</i>	<i>Date of death</i>
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<i>Normal residence (for infant born in institution, residence of mother before admission)</i>	<i>Age in years last birth day</i>	<i>If under one year</i>		<i>If under 24 hours</i>	
		<i>Months</i>	<i>Days</i>	<i>Hours</i>	<i>Minutes</i>

CAUSE OF DEATH

<i>* Cause of death</i>	<i>Code No.</i>	<i>Appropriate interval between onset and death.</i>
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I

Disease or condition directly leading to death

(a)
due to (or as a consequence of)

(This does not mean the mode of dying, eg. heart failure, asthenia etc. It means the diseases, injury of complication which caused death)

Antecedent causes

Morbid condition, if any, giving

(b)
due to (or as a consequence of)

(c)
.....
.....

II

Other significant conditions

Contributing to the death, but not related to the disease or condition causing it.

.....
.....

If diseased was a female

Was the death associated with Pregnancy.....

Was there a delivery
If death was due to external causes (violence) fill in also the following accident, suicide or homicide.....

Date of injury.....

How did injury occur?.....

Signed by:

Designation:

Registration No.:

Date:

Address:

* Out of (a), (b) and (c) etc., underlying cause of death may be marked by a medical practitioner.

TABLE I (1)

Statement showing leading cause of death occurred in Trivandrum Corporation according to sex for the year 1977

Code No.	Cause of death	Male	Female	NR	Total
A5	Enteritis and other diarrhoeal diseases	99 (6.27)	65 (5.97)	..	164 (6.12)
A6-10	Tuberculosis	78 (4.94)	43 (3.95)	..	121 (4.51)
A 20	Tetanus	22 (1.39)	18 (1.65)	..	40 (1.49)
A21	Other bacterial diseases	37 (2.34)	25 (2.30)	..	62 (2.31)
A45-61	Neoplasms	108 (6.84)	82 (7.53)	..	190 (7.09)
A64	Diabetes mellitus	47 (2.98)	38 (3.49)	1 (6.67)	86 (3.21)
A65	Avitaminoses and other nutritional deficiency	10 (0.63)	14 (1.29)	..	24 (0.89)
A67	Anaemias	35 (2.22)	26 (2.39)	..	61 (2.27)
A72	Meningitis	71 (4.50)	41 (3.77)	1 (6.67)	113 (4.21)
A79	Other diseases of nervous system & sense organs	46 (2.92)	41 (3.77)	..	87 (3.24)
A81-84	Heart diseases	270 (17.11)	137 (12.58)	1 (6.67)	408 (15.21)
A85	Cerebrovascular diseases	46 (2.92)	41 (3.77)	1 (6.67)	88 (3.28)
A92	Pneumonia	55 (3.49)	56 (5.14)	1 (6.67)	112 (4.18)
A93	Bronchitis, emphysema and asthma	36 (2.28)	27 (2.48)	..	63 (2.35)
A104	Diseases of digestive system	66 (4.18)	37 (3.40)	..	103 (3.84)
A131-135	Causes of perinatal morbidity & mortality	145 (9.19)	95 (8.72)	..	240 (8.95)
A 137	Symptoms and other ill defined conditions	65 (4.12)	35 (3.20)	1 (6.67)	101 (3.77)
A 138-150	Accidents	65 (4.12)	23 (2.11)	6 (6.67)	88 (3.28)
	Others	277 (17.55)	245 (22.49)	9 (60.00)	531 (19.79)
	Total	1578 (100.00)	1089 (100.00)	15 (100.00)	2682 (100.00)

(Figures in brackets indicate percentage)

TABLE I (2)

Statement showing the leading cause of death according to age group—1977

TRIVANDRUM		1	1-4	5-14	15-24	25-34	35-44
Code No.	Cause of death	(3)	(4)	(5)	(6)	(7)	(8)
(1)	(2)						
A5	Enteritis and other diarrhoeal diseases	43 (7.34)	67 (17.23)	19 (8.45)	4 (2.88)	6 (4.17)	4 (2.62)
A6-10	Tuberculosis	8 (1.36)	15 (3.86)	22 (9.79)	8 (5.77)	5 (3.57)	13 (8.65)
A20	Tetanus	16 (2.72)	5 (1.29)	3 (1.33)	3 (2.16)	2 (1.39)	3 (1.96)
A21	Other bacterial diseases	41 (6.97)	10 (2.57)	3 (1.33)	2 (1.44)	1 (0.69)	1 (0.69)
A45-61	Neoplasms	3 (0.51)	12 (3.08)	11 (4.89)	12 (8.64)	11 (7.64)	18 (11.83)
A64	Diabetes mellitus	..	..	2 (0.88)	3 (2.16)	4 (2.78)	7 (4.60)
A65	Avitaminoses and other nutritional deficiency	8 (1.36)	11 (2.83)	..	1 (0.72)	..	..
A67	Anaemias	1 (0.17)	4 (1.02)	3 (1.33)	2 (1.44)	9 (6.25)	6 (3.94)
A72	Meningitis	45 (7.67)	13 (3.34)	13 (5.78)	6 (4.33)	8 (95.55)	3 (1.96)

TABLE I (2)—(Contd.)

Code No.	Cause of death	1	1-4	5-14	15-24	25-34	35-44
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A79	Other diseases of nervous system and sense organs	5 (0.85)	37 (9.51)	21 (9.34)	4 (2.88)	5 (3.47)	4 (2.62)
A81-84	Heart diseases	8 (1.36)	9 (2.31)	15 (6.67)	21 (15.11)	23 (15.97)	22 (14.97)
A85	Cerebrovascular diseases	8 (1.36)	1 (0.26)	1 (0.44)	1 (0.72)	1 (0.69)	2 (1.32)
A92	Pneumonia	39 (6.66)	35 (9.00)	6 (2.67)	2 (1.44)	1 (0.69)	4 (2.62)
A93	Bronchitis, emphysema & asthma	7 (1.18)	15 (3.86)	1 (0.44)	1 (0.72)	1 (0.69)	2 (1.32)
A104	Diseases of digestive system	9 (1.63)	8 (2.06)	14 (6.22)	11 (7.82)	6 (4.17)	10 (6.58)
A131-135	Causes of perinatal morbidity & mortality	240 (40.95)	..	..	..	..	..
A137	Symptoms and other ill defined conditions	11 (1.87)	10 (2.57)	10 (4.44)	8 (5.77)	5 (3.47)	8 (5.25)
A138-150	Accidents	2 (0.34)	5 (1.27)	18 (8.00)	18 (12.96)	14 (9.72)	12 (7.90)
	Others	92 (15.70)	132 (33.93)	63 (28.00)	32 (23.04)	42 (29.16)	34 (22.36)
	Total	586 (100.00)	389 (100.00)	225 (100.00)	139 (100.00)	144 (100.00)	152 (100.00)

(Figures in brackets indicate percentages)

TABLE I (2) (Contd.)

Code No.	Cause of death	45-54	55-64	65-74	75 & above	Age N.R.	Total
(1)	(2)	(9)	(10)	(11)	(12)	(13)	(14)
A5	Enteritis and other diarrhoeal diseases	3 (1.26)	7 (2.52)	3 (1.38)	4 (4.45)	4 (1.79)	164 (6.12)
A6-10	Tuberculosis	16 (6.73)	15 (5.40)	8 (3.67)	3 (3.33)	8 (3.58)	121 (4.51)
A20	Tetanus	..	2 (0.72)	..	1 (1.11)	5 (2.24)	40 (1.49)
A21	Other bacterial diseases	..	2 (0.72)	1 (0.46)	..	2 (0.89)	62 (2.31)
A45-61	Neoplasms	40 (16.80)	29 (10.43)	17 (7.80)	9 (10.00)	28 (12.56)	190 (7.09)
A64	Diabetes mellitus	13 (5.46)	18 (6.47)	23 (10.53)	4 (4.45)	12 (5.38)	86 (3.21)
A65	Avitaminoses and other nutritional deficiency	..	..	1 (0.46)	1 (1.11)	2 (0.89)	24 (0.89)
A67	Anaemias	11 (4.62)	7 (2.52)	9 (4.13)	3 (3.33)	6 (2.69)	61 (2.27)
A72	Meningitis	8 (3.36)	5 (1.80)	4 (1.83)	..	8 (3.60)	113 (4.21)
A79	Other diseases of nervous system and sense organs	3 (1.26)	4 (1.44)	1 (0.46)	..	3 (1.35)	87 (3.24)

TABLE I(2) (Contd.)

Code No.	Cause of death	45.54	55.64	65.74	75&above	Age N.R.	Total
(1)	(2)	(9)	(10)	(11)	(12)	(13)	(14)
A81-84	Heart diseases	62 (26.05)	92 (33.09)	67 (30.73)	30 (33.33)	59 (26.46)	408 (15.21)
A85	Cerebrovascular diseases	10 (4.21)	19 (6.83)	24 (11.00)	9 (10.00)	12 (5.38)	88 (3.28)
A92	Pneumonia	6 (2.53)	2 (0.72)	7 (3.21)	4 (4.45)	6 (2.69)	112 (4.18)
A93	Bronchitis, emphysema & asthma	2 (0.84)	8 (2.88)	16 (7.34)	5 (5.56)	5 (2.24)	63 (2.35)
A104	Diseases of digestive system	16 (6.73)	11 (3.96)	6 (2.75)	1 (1.11)	11 (4.93)	103 (3.84)
A-131-135	Causes of perinatal morbidity & mortality	..	..	..	..	..	240 (8.95)
A137	Symptoms and other ill defined conditions	8 (3.36)	10 (3.60)	11 (5.05)	6 (6.66)	14 (6.29)	101 (3.77)
A138-150	Accidents	4 (1.68)	4 (1.44)	1 (0.46)	1 (1.11)	9 (4.09)	88 (3.28)
	Others	36 (15.12)	43 (15.46)	19 (8.72)	9 (10.00)	29 (13.00)	531 (19.79)
	Total	238 (100.00)	278 (100.00)	218 (100.00)	90 (100.00)	223 (100.00)	2682 (100.00)

Figures in brackets indicates percentages

TABLE I (3)

Statement showing the leading cause of death occurred in Trivandrum Corporation according to Religion for the year 1977

Code No.	Cause of death	Hindu	Christian	Muslim	N.A.	Total
A5	Enteritis and other diarrhoeal diseases	124 (6.18)	21 (6.14)	16 (5.40)	3 (7.69)	164 (6.12)
A6-10	Tuberculosis	95 (4.74)	18 (5.26)	7 (2.36)	1 (2.56)	121 (4.51)
A20	Tetanus	26 (1.30)	7 (2.05)	6 (2.03)	1 (2.56)	40 (1.49)
A21	Other bacterial diseases	41 (2.04)	9 (2.63)	12 (4.05)	..	62 (2.31)
A45-61	Neoplasms	143 (7.13)	25 (7.31)	22 (7.43)	..	190 (7.09)
A64	Diabetes mellitus	62 (3.09)	17 (4.97)	6 (2.03)	1 (2.56)	86 (3.21)
A65	Avitaminoses and other nutritional deficiency	20 (1.00)	..	2 (0.68)	2 (5.13)	24 (0.89)
A67	Anaemias	41 (2.04)	11 (3.22)	7 (2.36)	2 (5.13)	61 (2.27)
A72	Meningitis	81 (4.05)	12 (3.51)	20 (6.76)	..	113 (4.21)
A79	Other diseases of nervous system and sense organs	64 (3.19)	12 (3.51)	11 (3.73)	..	87 (3.24)
A81-84	Heart diseases	313 (15.62)	54 (15.79)	41 (13.85)	..	408 (15.21)
A 85	Cerebrovascular diseases	66 (3.29)	12 (3.51)	9 (3.05)	1 (2.56)	88 (3.28)
A92	Pneumonia	93 (4.64)	12 (3.51)	5 (1.67)	2 (5.13)	112 (4.17)
A93	Bronchitis, emphysema and asthma	54 (2.69)	4 (1.17)	5 (1.67)	..	63 (2.35)
A104	Diseases of digestive system	83 (4.14)	8 (2.34)	1 (3.73)	1 (2.56)	103 (3.84)
A131-135	Causes of perinatal morbidity & mortality	171 (8.53)	33 (9.65)	34 (11.49)	2 (5.13)	240 (8.95)
A137	Symptoms and other ill defined condition	79 (3.94)	9 (2.63)	10 (3.38)	3 (7.69)	101 (3.77)
A138-150	Accidents	63 (3.14)	13 (3.80)	11 (3.73)	1 (2.56)	88 (3.28)
.	Others	386 (19.25)	65 (19.00)	61 (20.60)	19 (48.74)	531 (19.79)
	Total	2005 (100.00)	342 (100.00)	296 (100.00)	39 (100.00)	2682 (100.00)

Figures in brackets indicates percentages)

TABLE I (4)

Coverage Statistics—1977

TRIVANDRUM CORPORATION

Cause of death	Hindu		Christian		Muslim		Total		Total
	M.	F.	M.	F.	M.	F.	M.	F.	
Drowning	2	..	9	..	3	..	14	..	14 (8.00)
Gastro enteritis	7	4	..	2	..	5	7	11	18 (10.28)
Tuberculosis	4	5	2	7	6	1	12	13	25 (14.29)
Asthma	1	7	1	3	1	4	3	14	17 (9.71)
Paralysis of cerebral apoplexy	8	2	3	..	4	1	15	3	18 (10.28)
Heart attack	2	1	4	1	1	2	7	4	11 (6.29)
Heart diseases	4	2	3	3	1	2	8	7	15 (8.57)
Jaundice	..	1	1	4	..	3	1	8	9 (5.14)
Mental retardation	..	1	..	2	..	3	..	6	6 (3.43)
Hyperplasia of prostate	5	2	2	3	4	2	11	7	18 (10.28)
Senility	6	2	4	6	4	2	14	10	24 (13.73)
Total	39	27	29	31	24	25	92	83	175 (100.00)

(Figures in brackets show percentages)

3.1 Report on medically certified deaths in the city hospitals in Cochin Corporation 1977

The following diseases are found to be the major causes of death in the city hospitals during the year 1977. These diseases claim 4% or more deaths reported from the hospitals during the year:—

- | | |
|---|--------|
| 1. Tuberculosis | A6-10 |
| 2. Neoplasms | A45-61 |
| 3. Heart diseases | A81-84 |
| 4. Cerebrovascular diseases | A85 |
| 5. Pneumonia | A92 |
| 6. Causes of perinatal morbidity and mortality (A131-135) | |
| 7. Accidents | |

3.2 Sex-wise distribution of deaths due to leading causes

The sex-wise distribution of deaths due to leading causes is given in Table II-1 out of the 1828 deaths reported from the city hospitals, 62.5% are to males and 37.5% to females.

1. *Tuberculosis*:—Tuberculosis claims 7.49% of total deaths during the year. 8.58% of male deaths and 5.69% of female deaths are due to tuberculosis. This shows that male victims of this disease are more than female victims.

2. *Neoplasms*:—Deaths due to neoplasms form 10.94% of total deaths. The percentage of male and female deaths due to this disease come to 10.77 and 11.24 respectively.

3. *Heart diseases*:—Heart diseases are the topmost cause of death during the year. Deaths due to these diseases alone form 16.58% of total deaths. 18.39% of male deaths and 13.58% of female deaths are seen to have occurred due to heart diseases.

4. *Cerebrovascular disease*:—Deaths due to this disease constitute 6.73% of the total deaths. The incidence of this disease falls more or less in the same way on both the sexes.

5. *Pneumonia*:—This disease is responsible for 4.49% of deaths during the year. The percentage of female deaths due to pneumonia is higher than that of male deaths.

6. *Causes of perinatal morbidity and mortality*:—6.07 of deaths are due to this set of diseases. The percentage of male and female deaths due to these diseases are 5.25 and 7.45 respectively.

7. Accidents:—7.49% of total deaths are due to accidents. The incidence of accidents falls more heavily on males.

Deaths due to diseases of nervous system and sense organs and anaemias are found to be comparatively higher among females.

3.3 Age-wise distribution of deaths due to leading causes

Age-wise distribution of deaths due to leading causes is furnished in table II-2. This analysis will help the identification of age affinity of leading causes of death.

Infant death (0-1): 12.9% of deaths reported during the year are under this age group. Out of this more than 45% of deaths are due to causes of perinatal morbidity and mortality. This is followed by pneumonia (16.26%), tetanus and enteritis and other diarrhoeal diseases each claiming 4.07% of death.

1-4. Deaths in this age group constitute 8.48% of the total deaths. The first major cause of death in this age group is noted as the diseases of nervous system and sense organs, the percentage of death being 14.84. This is followed by pneumonia with 12.90% of deaths. Enteritis and other diarrhoeal diseases, anaemias and diseases of digestive system are other significant diseases in this age group.

5-14. Deaths in this age group form 6.30% of the total deaths. As in the case of the previous age group, diseases of nervous system is the first major cause of death in this age group also. Next to this stands accidents claiming 11.97% of deaths. Diseases of digestive system, pneumonia, heart diseases, enteritis and other diarrhoeal diseases and tetanus are also significant in this age group.

15-24. 6.54% of deaths are under this age group. The main cause of death reported is accidents. This cause alone claims 28.33% of deaths in this age group. This is followed by heart diseases, tuberculosis and neoplasms claiming 13.33%, 8.33% and 6.67% of deaths respectively.

25-34. This age group claims 6.07% of deaths during the year. 22.52% of deaths in this age group are due to accidents alone. Tuberculosis, heart diseases and neoplasms are also outstanding in this age group.

35-44. 8.81% of deaths come under this age group. Neoplasms and heart diseases each claiming 16.77% of deaths shares first rank as the major cause of death in this age group. Accidents, tuberculosis, cerebrovascular diseases and diseases of digestive system are also noted as significant causes of death in this age group.

45-54. 15.43% of deaths reported from the hospitals are found to be in this age group. Heart diseases alone claim 27.30% of deaths. Neoplasms and tuberculosis claiming 19.15% and 12.77% of deaths respectively are other prominent causes of death in this age group.

55-64. This age group accounts for 16.14% of deaths. As in the case of previous age group, heart diseases group which claims 28.14% of deaths is the topmost cause of death in this age group also. This is followed by Neoplasms, Cerebrovascular diseases claiming 16.95% and 11.19% of deaths respectively. Tuberculosis claims 9.15% of deaths.

65-74. Deaths in this age group form 13.46% of total deaths. The first major cause of death in this age group is heart diseases which claim 25.61% of deaths in this age group—Cerebrovascular diseases, neoplasms, tuberculosis and accidents are other causes of death to be noted.

75 and above: 5.19% of total deaths are in this age group. Cerebrovascular disease claiming 28.42% of deaths occupies first rank as the major cause of death in this age group. This is followed by heart disease and neoplasms with 17.89% and 12.63% of deaths respectively.

3.4 Religion-wise distribution of deaths due to leading cause

Table II (3) furnishes the religion-wise distribution of deaths due to leading causes.

Out of the 1828 deaths reported from the hospitals during the year, 45% are to Hindus, 37% to Christians and 18% to Muslims.

We find heart diseases standing first as the major cause of death among all the three religions. However, when compared to the other religions the percentage of death due to this disease is higher among Christians.

The second major cause of death among Hindus and Christians is neo-plasms while among Muslims it is tuberculosis.

The third major cause of death among Hindus is found to be accidents which claims 8.62% of death. Among Christians cerebrovascular disease claiming 8.57% of deaths occupies third place as the major cause of death. Neoplasms hold third place as the major disease among Muslims.

Deaths due to accidents are comparatively less among Muslims.

3.5 Domiciliary deaths:

Details regarding 87 domiciliary deaths are furnished in this report [Table II (4)]. Heart attack and asthma are the most outstanding causes of domiciliary deaths reported during the year. Male deaths reported due to these

diseases are more than female deaths. Senility, cancer and tuberculosis of lungs are other significant causes of domiciliary deaths. Senile deaths are mostly seen among females.

3.6 Summary of findings

1. Mortality due to causes of perinatal morbidity and nortality is very high among infants. More than 45% infant deaths reported are due to this cause alone.

2. Diseases of nervous system and sense organs can be seen as the number one killer among the age groups 1-4 and 5-14. However, when all the age groups taken together, the percentage of death due to this cause of deth is below 4%.

3. Accidents occupy first place as the major killer in the age groups 15-24 and 25-34.

4. From the age group 35-44 onwards, heart disease group stands as the most outstanding cause of death. It is also noted that male victims of this disease are much higher than female victims.

5. In the age group 55-64, and above, mortality due to cerebrovascular diseases is very high.

6. The disease pattern of all the age groups from 25-34 to 75 and above is more or less the same. Heart diseases, neoplasms, tuberculosis and cerebrovascular diseases are prominent among them.

7. Deaths due to diabetes mellitus are comparatively more among age group 55-64 and 65-74. So also with bronchitis, emphysema and asthma.

8. Heart attack and asthma are the two important causes of domiciliary deaths during the year. Most of the deaths reported due to senility are for females.

TABLE II (1)
Statement showing the leading cause of death occurred in Cochin Corporation according to sex 1977

Code No.	Cause of death	Male	Female	Total
A5	Enteritis & other diarrhoeal diseases	18 (1.58)	19 (2.77)	37 (2.02)
A6-10	Tuberculosis	98 (8.58)	39 (5.69)	137 (7.49)
A20	Tetanus	21 (1.83)	12 (1.75)	33 (1.81)
A21	Other bacterial diseases	8 (0.70)	6 (0.88)	14 (0.77)
A45-61	Neoplasms	123 (10.77)	77 (11.21)	200 (10.94)
A64	Diabetes mellitus	25 (2.19)	21 (3.01)	46 (2.52)
A65	Avitaminosis and other nutritional deficiency	6 (0.53)	11 (1.61)	17 (0.93)
A67	Anaemias	19 (1.66)	25 (3.65)	44 (2.41)
A72	Meningitis	12 (1.05)	8 (1.17)	20 (1.09)
A79	Diseases of nervous system and sense organs	34 (2.98)	34 (4.96)	68 (3.72)
A81-84	Heart diseases	210 (18.39)	93 (13.58)	303 (16.58)
A85	Cerebrovascular disease	76 (6.66)	47 (6.86)	123 (6.73)
A92	Pneumonia	42 (3.68)	40 (5.81)	82 (4.49)
A93	Bronchitis emphysema & asthma	26 (2.92)	19 (2.41)	45 (2.46)
A104	Diseases of digestive system	39 (3.42)	21 (3.07)	60 (3.28)
A131-135	Causes of perinatal morbidity and mortality	60 (5.25)	51 (7.45)	111 (6.07)
A137	Symptoms and other ill defined conditions	13 (1.14)	5 (0.72)	18 (0.98)
A138-150	Accidents	110 (9.65)	27 (3.94)	137 (7.49)
	Others	203 (17.76)	130 (18.98)	333 (18.22)
	Total	1143 (100)	685 (100)	1828 (100)

(Figures in brackets indicate percentages)

TABLE II (2)

Statement showing the leading causes of death in Cochin Corporation according to age groups for the year 1977

Code No.	Cause of death	1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 & above	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
A5	Enteritis and other diarrhoeal diseases	10 (4.07)	12 (7.74)	5 (4.27)	..	2 (1.80)	1 (0.62)	3 (1.06)	2 (1.02)	1 (0.41)	..	37 (2.02)
A6-10	Tuberculosis	4 (1.63)	6 (3.87)	3 (2.56)	10 (8.33)	16 (14.41)	15 (9.32)	36 (12.77)	27 (9.15)	16 (6.50)	4 (4.21)	137 (7.49)
A20	Tetanus	10 (4.07)	4 (2.58)	5 (4.27)	4 (3.33)	1 (0.90)	4 (2.48)	2 (0.71)	1 (0.34)	2 (0.81)	..	33 (1.84)
A21	Other bacterial diseases	8 (3.35)	1 (0.65)	2 (1.71)	1 (0.83)	1 (0.90)	..	..	1 (0.34)	..	..	14 (0.77)
A45-61	Neoplasms	2 (0.81)	3 (1.94)	3 (2.56)	8 (6.67)	12 (10.81)	27 (16.77)	54 (19.15)	50 (16.95)	29 (11.79)	12 (12.63)	200 (10.94)
A64	Diabetes mellitus	..	..	..	3 (2.50)	..	5 (3.11)	6 (2.13)	15 (5.08)	16 (6.50)	1 (1.05)	46 (2.52)
A65	Avitaminoses and other nutritional deficiency	4 (1.63)	10 (6.45)	1 (0.85)	..	..	1 (0.62)	..	1 (0.33)	..	..	17 (0.93)
A67	Anaemias	..	4 (2.58)	4 (3.42)	1 (0.83)	3 (2.70)	4 (2.48)	9 (3.19)	6 (2.03)	6 (3.19)	7 (7.37)	44 (2.41)
A72	Meningitis	7 (2.83)	1 (0.65)	4 (3.42)	2 (1.68)	..	3 (1.87)	2 (0.71)	1 (0.34)	..	..	20 (1.09)
A79	Diseases of nervous system & Sense Organs	4 (1.63)	23 (14.84)	21 (17.95)	5 (4.18)	3 (2.70)	6 (3.73)	1 (0.36)	3 (1.02)	2 (0.81)	..	68 (3.72)

TABLE II (2)—(Cont'd.)

Code No.	Cause of death	1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 & above	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
A 81-84	Heart diseases	..	..	7 (5.98)	16 (13.33)	13 (11.71)	27 (16.77)	77 (27.30)	83 (28.14)	63 (25.61)	17 (17.89)	303 (16.58)
A 85	Cerebrovascular diseases	..	..	2 (1.71)	1 (0.83)	4 (3.60)	9 (5.59)	11 (3.90)	33 (11.19)	36 (14.63)	27 (28.42)	123 (6.73)
A 92	Pneumonia	40 (16.26)	20 (12.90)	5 (4.27)	1 (0.83)	1 (0.90)	..	3 (1.06)	6 (2.03)	4 (1.63)	2 (2.11)	82 (4.49)
A 93	Bronchitis, emphysema and Asthama	3 (1.22)	6 (3.87)	..	..	2 (1.80)	..	10 (3.55)	12 (4.06)	10 (4.07)	2 (2.11)	45 (2.46)
A 104	Other diseases of digestive system	10 (4.07)	8 (5.16)	8 (6.84)	1 (0.83)	6 (5.42)	7 (4.35)	8 (2.84)	8 (2.71)	3 (1.22)	1 (1.05)	60 (3.28)
A 131-135	Causes of perinatal morbidity and mortality	111 (45.12)	..	..	..	..	..	..	..	..	..	111 (6.07)
A 137	Symptoms and other ill defined conditions	..	1 (0.65)	1 (0.85)	1 (0.83)	..	..	4 (1.42)	4 (1.36)	5 (2.03)	3 (2.11)	18 (6.98)
A 138-150	Accidents	1 (0.41)	3 (1.94)	14 (11.97)	34 (28.33)	25 (22.52)	22 (13.66)	14 (4.96)	9 (3.06)	15 (6.10)	..	137 (7.49)
	Others	32 (13.00)	53 (34.18)	32 (27.36)	32 (26.67)	22 (19.83)	30 (18.63)	42 (14.9)	32 (10.35)	38 (15.45)	20 (21.05)	333 (18.22)
	Total	246 (100)	155 (100)	117 (100)	120 (100)	111 (100)	161 (100)	282 (100)	295 (100)	246 (100)	95 (100)	1828 (100)

(Figures in brackets show percentages)

TABLE II (3)

Statement showing leading causes of death occurred in Cochin Corporation according to Religion 1977

Code No.	Cause of death	Hindu	Christian	Muslim	Total
A5	Enteritis & other diarrhoeal diseases	22 (2.63)	8 (1.20)	7 (2.13)	37 (2.02)
A6-10	Tuberculosis	61 (7.31)	40 (6.02)	36 (10.98)	137 (7.49)
A20	Tetanus	18 (2.16)	8 (1.20)	7 (2.13)	33 (1.81)
A21	Other bacterial diseases	7 (0.84)	4 (0.60)	3 (0.91)	14 (0.77)
A45-61	Neoplasms	90 (10.78)	85 (12.78)	25 (7.62)	200 (10.94)
A64	Diabetes mellitus	25 (2.99)	14 (2.11)	7 (2.13)	46 (2.52)
A65	Avitaminoses and other nutritional deficiency	8 (0.96)	1 (0.15)	8 (2.44)	17 (0.93)
A67	Anaemias	23 (2.75)	13 (1.96)	8 (2.44)	44 (2.41)
A72	Meningitis	6 (0.72)	8 (1.20)	6 (1.83)	20 (1.09)
A79	Other diseases of nervous system and sense organs	34 (4.07)	22 (3.31)	12 (3.66)	68 (3.72)
A81-84	Heart diseases	124 (14.85)	129 (19.40)	50 (15.24)	303 (16.58)
A85	Cerebrovascular diseases	50 (5.99)	57 (8.57)	16 (4.88)	123 (6.73)
A92	Pneumonia	31 (3.71)	28 (4.21)	23 (7.02)	82 (4.49)
A93	Bronchitis, emphysema & asthma	13 (1.56)	22 (3.31)	10 (3.05)	45 (2.46)
A104	Other disease of digestive system	28 (3.35)	22 (3.31)	10 (3.05)	60 (3.28)
A131-135	Causes of perinatal morbidity and mortality	55 (6.59)	36 (5.41)	20 (6.10)	111 (6.07)
A137	Symptoms and other illdefined conditions	11 (1.32)	5 (0.75)	2 (0.61)	18 (0.98)
A138-150	Accidents	72 (8.62)	51 (7.67)	14 (4.27)	137 (7.49)
	Others	157 (18.80)	112 (16.84)	64 (19.51)	333 (18.22)
	Total	835 (100.00)	665 (100.00)	328 (100.00)	1828 (100.00)

(Figures in brackets indicate percentage)

TABLE 11(4)

Coverage statistics—1977

COCHIN

Cause of deaths	Hindu		Christians		Muslim		Total		Total
	M	F	M	F	M	F	M	F	
Gastro enteritis	1	..	..	..	..	..	1	..	1 (1.15)
Peptic ulcer	..	1	..	1	..	2	..	4	4 (4.59)
Tuberculosis of lungs	..	2	2	2	..	2	2	6	8 (9.19)
Asthma	4	3	4	2	..	..	8	5	13 (14.95)
Paralysis	1	2	..	..	..	..	1	2	3 (3.46)
Anaemia	3	..	..	1	..	..	3	1	4 (4.59)
Congenital heart diseases	3	..	..	..	..	..	3	..	3 (3.46)
Heart attack	7	3	3	..	2	..	12	3	15 (17.24)
Jaundice	..	1	1	..	..	..	1	1	2 (2.30)
Cancer	3	2	1	..	2	1	6	3	9 (10.34)
Diabetes	..	2	..	..	..	..	..	2	2 (2.30)
Hyper plasia	..	..	..	1	..	..	..	1	1 (1.15)
Senility	2	7	..	2	..	..	2	9	11 (11.64)
Other diseases	3	3	2	..	2	1	7	4	11 (12.64)
Total	27	26	13	9	6	6	46	41	87

(Figures in brackets show percentages)

4.1 Report on medical certification of cause of death in Calicut Corporation-1977

Causes of death pertaining to 3387 deaths, received from the medical institutions in the city are analysed in this report. Out of this, 63.8% are male cases and the remaining 36.2% female cases.

The following major causes of death which were responsible for 4% or more of the total reported death alone are discussed in detail in this report.

1. Tuberculosis (A 6-10)
2. Neoplasm (A 45-61)
3. Heart diseases (A81-84)
4. Cerebrovascular disease (A 85)
5. Diseases of digestive system (A 104)
6. Causes of perinatal morbidity and mortality (A 131-135)
7. Accidents (A 138-150)

4.2 Sex-wise distribution of deaths due to leading causes

Table III(1) provides the sex-wise distribution of deaths due to leading causes.

1. *Tuberculosis*

This disease accounts for 8.89% of deaths reported during the year. Deaths due to this disease among males are noted to be much higher than that among females; They are 9.82% and 7.26% respectively.

2. *Neoplasms*

7.50% of total deaths are reported to have occurred due to neoplasms. Here also male victims are much more than female victims, the percentage being 8.24 and 6.19 respectively.

3. *Heart diseases*

This is the most outstanding cause of death reported from the city hospitals. This disease group alone claims 12.81% of deaths during the year. Male victims of heart disease out-number female victims. The percentage of male death is 14.86. The corresponding figure for females is 9.21.

4. *Cerebrovascular diseases*

Deaths due to cerebrovascular disease form 5.49% of total reported deaths. 5.32% of male deaths and 5.79% female deaths are due to this disease.

5. *Diseases of digestive system*

4.34% of deaths are reported to have occurred due to diseases of digestive system. Male and female deaths come to 4.31% and 4.40% respectively.

6. *Causes of perinatal morbidity and mortality*

Deaths due to this set of diseases include still births and first week deaths. 6.47% of deaths reported during the year are due to these causes. Out of this, 6.02% are among male infants and 7.25% among female infants.

7. *Accidents*

Deaths on account of accidents form 7.03% of total deaths. As in the case of other cities, the percentage of death due to accidents are higher among males in this city also when the percentage of male deaths is 8.94% the corresponding figure for females is only 3.67%.

In addition to the diseases discussed above, diseases like enteritis and other diarrhoeal diseases, bacterial diseases, disease of nervous system and sense organs and pneumonia are found to be significant among females. Each of these diseases were responsible for more than 4% of deaths among females. However when males and females taken together, deaths due to these diseases fall below 4%.

4.3 **Age-wise distribution of death due to leading causes**

Table III(2) gives the agewise distribution of deaths due to leading causes.

0-1 (infant death):—15.65% of the deaths reported from medical institutions are infant deaths. It is seen that 41.32% of infant deaths are due to causes of perinatal morbidity and mortality alone. This is followed by bacterial diseases and pneumonia claiming 11.32% and 8.49% of deaths respectively.

1-4:—Deaths in this age group constitute 9.57% of total deaths. Tuberculosis with 13.27% of deaths to its credit stands first as the major killer disease in this age group during the year. This is followed by enteritis and other diarrhoeal diseases claiming 12.96% of deaths. Diseases of nervous system and sense organs and pneumonia are also found to be prominent in this age group.

5-14:—This age group claims 8.87% of deaths reported during the year. Diseases of nervous system and sense organs which claim 13.29% deaths stands first as the major cause of death in this age group. Accidents group claims 8.64% of deaths in this age group. This is followed by diseases of digestive system and tuberculosis, each claiming 6.98% of deaths. Enteritis and other diarrhoeal diseases, meningitis and tetanus are other notable causes of death in this age group. However, when all the age groups taken together, deaths due to these three diseases fall below 4%.

15-24:—7.59% of deaths come under this age group. Accidents alone claim 17.12% of deaths in this age group. This is followed by tuberculosis and heart diseases each claiming 7.39% of deaths. Deaths due to neoplasms, tetanus, diseases of digestive system and meningitis are also to be noted in this age group.

25-34:—8.39% of total deaths are reported to have occurred in this age group. Accident group claiming 16.55% of deaths stands as the first cause of death in this age group during the year. This is followed by tuberculosis with 13.03% of deaths. As in the case of the previous age group, heart diseases, diseases of digestive system, neoplasms and tetanus are other leading causes of death in this age group.

35-44:—10.69% of deaths reported during the year come under this age group. Heart diseases with 18.51% of deaths takes first place as the leading cause of death in this age group. This is followed by accidents claiming 12.98% of deaths. Tuberculosis, Neoplasms and diseases of digestive system are other leading causes of mortality in this age group.

45-54:—Deaths under this age group constitute 12.73% of the total deaths reported during the year. Heart diseases are responsible for more than 20% of deaths in this age group. This is followed by tuberculosis and neoplasms claiming 12.99% and 12.53% of deaths respectively.

55-64:—13.91% of mortality cases reported are coming under this age group. Heart disease continues to be the top most cause of death in this age group also; the percentage of death is 22.51. The second major cause of death is neoplasms (13.16%). Tuberculosis and cerebrovascular diseases are other significant diseases to be noted.

65-74:—This age group claims 8.87% of deaths. Heart disease holds first place as the major killer disease in this age group too. This disease alone is responsible for 23.59% of deaths. Cerebrovascular diseases (13.62%) and neoplasms (12.96%) also deserve to be placed as major causes of death in this age group.

75 to above:—3.72% deaths come under this age group. Here also heart diseases, cerebrovascular diseases and neoplasms continue as the first, second and third causes of death respectively.

4.4 Religion—wise distribution of death due to leading causes

Table III(3) furnishes the religion wise distribution of deaths due to leading causes.

Out of 3387 deaths reported from the medical institutions 60.44% are to Hindus, 35.22% to Muslims and 4.34% to Christians.

Among all the three religions, the highest percentage of death has occurred due to heart diseases.

Among Hindus and Muslims the second major cause of death is tuberculosis whereas among Christians it is the neoplasm.

The percentage of death due to causes of perinatal morbidity and mortality is comparative higher among Hindus and lower among Christians.

The percentage of death due to cerebrovascular disease is comparatively higher among Christians. So also with pneumonia and accidents. Similarly, the percentage of death due to enteritis and other diarrhoeal diseases and tetanus can be seen higher among Muslims during the year. It is also noted that percentage of death due to accidents and cerebrovascular diseases is comparatively lower among Muslims.

4.5 Domiciliary Death [Table II(4)]

Details relating to 179 deaths occurred at home to normal residents in the city are analysed. There are 101 male deaths and 78 female deaths. Out of this 32 deaths—12 male and 20 female are found to be due to diseases of nervous system and sense organs (A79). Heart diseases (A81-84) and tuberculosis are other important causes of domiciliary deaths. Both, tuberculosis as well as heart diseases show greater affinity towards males. Deaths due to diseases of nervous system and sense organs are comparatively more among females. Bronchitis, emphysema and asthma (A93) are another important cause of domiciliary deaths. Female victims of this disease are more than male victims. Victims of cerebrovascular diseases are more among males during the year. Male deaths due to anoxic and hypoxic conditions peculiar to early infancy are comparatively larger. 13.41% of domiciliary deaths collected are due to symptoms and other ill defined conditions (A137)

4.6 Summary of Findings

- (1) The most outstanding cause of death among children is causes of Perinatal morbidity and mortality. 41.32% of infant deaths are due to this cause alone.
- (2) Percentage of deaths due to heart diseases shows an increasing tendency with age groups. From the age group 35-44 and above this is the number one killer disease.
- (3) Deaths due to cerebrovascular diseases and neoplasms are also comparatively more among higher age groups.
- (4) Male victims of heart diseases, tuberculosis and neoplasms are found to be more than that of females.

- (5) Mortality due to accidents is very high in the age groups 15-24 and 25-34.
 - (6) Deaths due to certain diseases like enteritis and other diarrhoeal diseases, bacterial diseases, meningitis diseases of nervous system and sense organs and pneumonia are noted to be very common among children. However when all the age groups taken together percentage of death due to each of these diseases is below 4%.
 - (7) Diseases of digestive system has shown greater affinity towards the age groups 5-15 to 45-54 during the year. Frequency of death due to this disease is found to be high in these age groups.
 - (8) Diseases of nervous system and sense-organs, tuberculosis and heart diseases are the main causes of domiciliary deaths in the city during the year.
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TABLE III (1)

Statement showing the leading causes of death according to sex for
Calicut Corporation 1977

Code No.	Cause of death	Male	Female	Total
A5	Enteritis and other diarrhoeal diseases	62 (2.87)	54 (4.40)	116 (3.42)
A6-10	Tuberculosis	212 (9.81)	89 (7.25)	301 (8.89)
A20	Tetanus	43 (1.99)	41 (3.34)	84 (2.48)
A21	Other bacterial diseases	54 (2.50)	51 (4.16)	105 (3.10)
A45-61	Neoplasma	178 (8.24)	76 (6.19)	254 (7.50)
A64	Diabetes mellitus	52 (2.41)	18 (1.47)	70 (2.07)
A65	Avitamenosis and other nutritional deficiency	27 (1.25)	20 (1.63)	47 (1.39)
A67	Anaemias	50 (2.31)	33 (2.69)	83 (2.45)
A72	Meningitis	51 (2.36)	41 (3.34)	92 (2.72)
A79	Other diseases of nervous system and sense organs	71 (3.29)	58 (4.73)	129 (3.81)
A81-84	Heart diseases	321 (14.86)	113 (9.21)	434 (12.81)
A85	Cerebrovascular diseases	115 (5.32)	71 (5.79)	186 (5.49)
A92	Pneumonia	63 (2.92)	63 (5.13)	126 (3.72)
A93	Bronchitis emphysema and asthma	54 (2.50)	30 (2.44)	84 (2.48)
A104	Other diseases of digestive system	93 (4.31)	54 (4.40)	147 (4.34)
A131-135	Causes of perinatal morbidity and mortality	130 (6.02)	89 (7.25)	219 (6.47)
A137	Symptoms and other ill defined conditions	52 (2.41)	37 (3.02)	89 (2.63)
A138-150	Accidents	193 (8.94)	45 (3.67)	238 (7.03)
	Others	339 (15.69)	244 (19.89)	583 (17.21)
	Total	2160 (100)	1227 (100.00)	3387 (100.00)

(Figures in brackets indicate percentage)

TABLE III (2)

Statement showing the leading causes of death occurred in Calicut Corporation according to age group for 1977

Code No.	Cause of death	Less than 1						75 & above					Total
		1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	(11)	(12)	(13)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
A 5	Enteritis and other diarrhoeal diseases	21 (3.96)	42 (12.96)	18 (5.98)	4 (1.56)	6 (2.11)	6 (1.66)	7 (1.67)	6 (1.27)	4 (1.33)	2 (1.59)	116 (3.42)	
A6-10	Tuberculosis	9 (1.70)	43 (13.27)	21 (6.98)	19 (7.39)	37 (13.03)	45 (12.43)	56 (12.99)	49 (10.40)	16 (5.32)	6 (4.76)	301 (8.89)	
A 20	Tetanus	14 (2.64)	7 (2.16)	17 (5.65)	13 (5.06)	13 (4.58)	9 (2.49)	4 (0.93)	4 (0.85)	2 (0.66)	1 (0.79)	84 (2.48)	
A 21	Other bacterial disease	60 (11.32)	10 (3.09)	6 (2.33)	5 (1.95)	6 (2.11)	6 (1.66)	2 (0.46)	7 (1.49)	3 (1.99)	..	105 (3.10)	
A 45-61	Neoplasmas	..	8 (2.47)	12 (3.99)	19 (7.36)	15 (5.28)	36 (9.94)	54 (12.53)	62 (13.16)	39 (12.96)	9 (7.14)	254 (7.50)	
A 64	Diabetes mellitus	..	1 (0.31)	1 (0.33)	4 (1.54)	6 (2.11)	9 (2.49)	16 (3.72)	21 (4.46)	12 (3.99)	..	70 (2.07)	
A 65	Avitaminosis and other nutritional deficiency	14 (2.64)	14 (4.32)	5 (1.66)	1 (0.39)	1 (0.35)	3 (0.83)	3 (0.69)	3 (0.64)	2 (0.66)	1 (0.79)	47 (1.39)	
A 67	Anaemias	1 (0.19)	9 (2.78)	3 (0.99)	3 (1.16)	3 (1.06)	13 (3.99)	13 (3.02)	15 (3.18)	20 (6.64)	3 (2.38)	83 (2.45)	
A 72	Meningitis	21 (3.96)	10 (3.09)	18 (5.98)	11 (4.25)	9 (3.17)	10 (3.07)	4 (0.93)	6 (1.27)	2 (0.66)	1 (0.79)	92 (2.72)	
A 79	Other diseases of nervous system and sense organs	12 (2.26)	38 (11.73)	40 (13.29)	7 (2.70)	6 (2.11)	12 (3.99)	4 (0.93)	7 (1.49)	2 (0.66)	..	129 (3.81)	

Code No.	Cause of death	Less than 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 & above	Total
A 81-84	Heart diseases	7 (1.32)	6 (1.85)	13 (4.32)	19 (7.39)	28 (9.86)	67 (18.51)	88 (20.42)	106 (22.51)	71 (23.50)	29 (23.01)	434 (12.81)
A 85	Cerebrovascular diseases	13 (2.45)	3 (0.92)	5 (1.66)	5 (1.66)	7 (2.46)	17 (4.70)	25 (6.03)	48 (10.19)	41 (15.62)	21 (16.67)	186 (5.49)
A 92	Pneumonia	45 (8.49)	31 (9.57)	4 (1.33)	7 (2.72)	4 (1.41)	3 (0.83)	9 (2.09)	8 (1.69)	11 (3.65)	4 (3.17)	126 (3.72)
A 93	Bronchitis, emphysema and asthma	19 (3.58)	18 (5.56)	2 (0.66)	1 (0.39)	1 (0.35)	2 (0.55)	13 (3.03)	14 (2.97)	9 (2.99)	5 (3.97)	84 (2.48)
A 104	Diseases of digestive system	12 (2.26)	12 (3.70)	21 (6.98)	12 (5.06)	15 (5.28)	17 (4.70)	27 (6.26)	17 (3.61)	10 (3.32)	4 (3.17)	147 (4.34)
A 131-135	Causes of perinatal morbidity and mortality	219 (41.32)	..	..	..	..	..	..	..	..	..	219 (6.47)
A 137	Symptoms and other ill defined condition	11 (2.08)	6 (1.85)	10 (3.32)	8 (3.12)	11 (3.87)	8 (2.21)	5 (1.16)	12 (2.55)	10 (3.32)	8 (6.34)	89 (2.63)
A 138-150	Accidents	5 (0.94)	4 (1.23)	26 (8.64)	44 (17.12)	47 (16.55)	47 (12.98)	30 (6.96)	16 (3.39)	13 (4.32)	6 (4.76)	238 (7.03)
	Others	47 (8.87)	62 (19.14)	79 (26.25)	75 (29.18)	69 (24.30)	51 (14.09)	70 (16.24)	70 (14.86)	34 (11.30)	25 (20.63)	583 (17.21)
	Total	530 (100)	324 (100)	301 (100)	257 (100)	284 (100)	362 (100)	431 (100)	471 (100)	301 (100)	126 (100)	3387 (100)

Figures in brackets indicate percentage.

TABLE III (3)

Statement showing the leading cause of death occurred in Calicut Corporation according to Religion--1977

<i>Code No.</i>	<i>Cause of death</i>	<i>Hindu</i>	<i>Xian</i>	<i>Muslim</i>	<i>Total</i>
A5	Enteritis and other diarrhoeal diseases	63 (3.08)	4 (2.72)	49 (4.11)	116 (3.42)
A6-10	Tuberculosis	174 (8.50)	9 (6.12)	118 (9.89)	301 (8.89)
A20	Tetanus	30 (1.47)	4 (2.72)	50 (4.19)	84 (2.48)
A21	Other bacterial diseases	57 (2.78)	5 (3.41)	43 (3.60)	105 (3.10)
A45-61	Neoplasm	157 (7.67)	13 (8.84)	84 (7.04)	254 (7.50)
A64	Diabetes mellitus	48 (2.34)	5 (3.41)	17 (1.42)	70 (2.07)
A65	Avitamenosis & other nutritional deficiency	26 (1.27)	1 (0.68)	20 (1.68)	47 (1.39)
A67	Anaemia	49 (2.39)	3 (2.04)	31 (2.60)	83 (2.45)
A72	Meningitis	60 (2.93)	2 (1.36)	30 (2.51)	92 (2.72)
A79	Other diseases of nervous system of sense organs	72 (3.52)	7 (4.76)	50 (4.19)	129 (3.81)
A81-84	Heart diseases	277 (13.53)	17 (11.56)	140 (11.74)	434 (12.81)
A85	Cerebrovascular diseases	120 (5.86)	11 (7.48)	55 (4.61)	186 (5.49)
A92	Pneumonia	79 (3.86)	8 (5.44)	39 (3.27)	126 (3.72)
A93	Bronchitis, emphysema asthma	49 (2.40)	2 (1.36)	33 (2.77)	84 (2.48)
A104	Other diseases of digestive system	80 (3.91)	6 (4.08)	61 (5.11)	147 (4.34)
A131-135	Causes of Perinatal morbidity & mortality	141 (6.89)	4 (2.72)	74 (6.20)	219 (6.47)
A137	Symptom & other ill defined conditions	60 (2.93)	4 (2.72)	25 (2.10)	89 (2.63)
A138-150	Accidents	150 (7.33)	16 (10.89)	72 (6.04)	238 (7.03)
	Others	355 (17.34)	26 (17.69)	202 (16.93)	583 (17.21)
	Total	2047 (100.00)	147 (100.00)	1193 (100.00)	3387 (100.00)

TABLE III (4)
Coverage Statistics—1977

Calicut Corporation

Code No.	Cause of death	Hindu		Christian		Muslim		Total		Total
		M	F	M	F	M	F	M	F	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A5	Enteritis and other diarrhoeal diseases	1	..	..	..	1	..	2	..	2 (1.12)
A6	Tuberculosis of respiratory system	8	2	..	..	6	1	14	3	17 (9.49)
A8	Tuberculosis of intestines, peritoneum and mesenteric glands	..	1	..	..	..	..	..	1	1 (0.56)
A16	Whooping cough	..	..	..	..	1	..	1	..	1 (0.56)
A45	Malignant neoplasms of buccal cavity and pharynx	4	..	..	..	..	..	4	..	4 (2.23)
A47	Malignant neoplasm of stomach	1	1	..	..	..	..	1	1	2 (1.12)
A58	Malignant neoplasm of other and unspecified sites	4	1	..	..	2	..	6	1	7 (3.91)
A59	Leukaemia	1	..	..	..	..	..	1	..	1 (0.56)
A65	Avitaminosis and other nutritional deficiency	..	1	1	..	..	..	1	1	2 (1.12)
A67	Anaemias	2	..	..	..	..	..	2	..	2 (1.12)
A79	Other diseases of nervous system and sense organs	5	7	..	..	7	13	12	20	32 (17.88)
A80	Active rheumatic fever	1	..	..	..	..	..	1	1	1 (1.12)
A81	Chronic rheumatic heart disease	6	2	..	..	..	..	3	6	5 (6.14)
A82	Hypertensive disease	..	..	..	..	..	..	2	..	2 (1.12)
A83	Ischaemic heart disease	9	5	1	1	4	4	4	14	10 (3.41)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A85	Cerebrovascular disease	4	2	..	..	1	1	5	3	8 (4.47)
A92	Pneumonia	1	..	..	..	..	..	1	..	1 (0.56)
A93	Bronchitis, emphysema and asthma	2	4	..	..	1	5	3	9	12 (6.70)
A96	Other diseases of respiratory system	2	..	..	..	1	..	3	..	3 (1.67)
A98	Peptic Ulcer	3	..	..	..	..	..	3	..	3 (1.67)
A102	Cirrhosis of liver	2	..	..	..	..	..	2	..	2 (1.12)
A104	Other diseases of digestive system	2	..	..	..	..	..	2	..	2 (1.12)
A105	Acute nephritis	..	..	..	..	..	1	..	1	1 (0.56)
A113	Haemorrhage of pregnancy and child birth	..	1	..	..	..	..	..	1	1 (0.56)
A134	Anoxic and hypoxic conditions not elsewhere classified	..	..	..	..	4	1	4	1	5 (2.79)
A137	Symptoms and other ill-defined conditions	1	14	..	..	5	4	6	18	24 (13.41)
A138	Motor vehicle accidents	..	..	1	..	..	..	1	..	1 (0.56)
A141	Accidental falls	1	..	..	..	..	..	1	..	1 (0.56)
A143	Accidental drowning	1	..	..	..	..	..	1	..	1 (0.56)
A146	All other accidents	1	..	..	..	..	..	1	..	1 (0.56)
A147	Suicide and self inflicted injury	3	..	..	..	..	..	3	..	3 (1.67)
Total		65	41	3	1	33	36	101	78	179 (100.00)

Figures in brackets indicate percentage

5.1 Report on medical certification of cause of death in Quilon Municipality 1977

In this report 1327 death cases, reported from the hospitals in the town are analysed. This is against 1460 cases reported in the previous year.

The following diseases which were responsible for 4% or more deaths are analysed in this report.

1. Enteritis and other diarrhoeal diseases (A5)
2. Anaemias (A.67)
3. Heart diseases (A81-84)
4. Cerebrovascular diseases (A85)
5. Pneumonia (A 92)
6. Causes of perinatal morbidity and mortality (A 131-135)
7. Accidents (A 138-150)

5.2 Sex-wise distribution of death due to leading causes.

Table No. IV (1) provides the sex-wise distribution of deaths due to leading causes of deaths. Out of the 1327 death cases reported, 58.55% were among males and the remaining 41.45% among females.

1. *Enteritis and other diarrhoeal diseases.*

This set of diseases accounts for 4.07% deaths during the year. It is seen that 3.4% of male deaths and 4.91% female deaths were due to this disease.

2. *Anaemias*

This disease claims 4.14% of total deaths reported during the year. The percentage of female death is slightly higher than that of male deaths.

3. *Heart diseases*

As in the case of other cities, this is the top most cause of death in Quilon too. 17.56% deaths are due to heart diseases alone. Male victims are more than female victims; the percentage being 20.59 and 13.27 respectively.

4. *Cerebrovascular diseases*

5.58% of total deaths are found to be due to cerebrovascular disease. 8% of female deaths are due to this disease, where as the corresponding figure for males comes to only 3.86%.

5. *Pneumonia*

Deaths due to pneumonia come to 6.48% when compared to other centres this is very high. 5.93% male deaths and 7.27% female deaths are seen to have occurred due to this disease.

6. *Causes of perinatal morbidity and mortality.*

The percentage of deaths due to this group of diseases comes to 4.75. Female victims are found to be more than male victims during the year.

7. *Accidents*

Accidents were responsible for 4.90% of deaths during the year. The percentage of male death (6.05) is higher than that of female death (3.27).

In addition to the above causes of death, tuberculosis is found to be a significant cause of death among females during the year. Similarly deaths among males due to bronchitis, emphysema and asthma have to be noted.

5.3 **Age-wise distribution of death due to leading causes.**

Table IV (2) gives the age-wise distribution of deaths due to leading causes. This is attempted in ten age segments.

0-1 (infant deaths): During the year, 16.41% of death reported from Quilon Municipality are included in this age group. The main cause of infant mortality is causes of perinatal morbidity and mortality. 28.89% of deaths were due to this cause alone. The second major cause of death in this age group is pneumonia which claims 18.81% deaths.

1-4: Deaths in this age-group constitute 11.45% of the total deaths. The first major cause of death in this age group is enteritis and other diarrhoeals diseases. This set of diseases alone claims 17.10% of deaths in this age group during the year. This is followed by pneumonia with 16.45% of deaths to its credit. Diseases of nervous system and sense organs are another prominent cause of death in this age-group. Tuberculosis, meningitis and avitaminosis and other nutritional deficiency are also to be noted.

5-14: This age group claims 8.06% of reported deaths. Accident group claiming 11.21% of deaths hold first place as the major killer in the age group. Tetanus, pneumonia and diseases of nervous system and sense organs are other three diseases equally important in this age-group during the year 1977. Each of them claims 6.54% of deaths. Heart diseases, meningitis and anaemias are also to be noted as leading killer diseases in this age group.

15-24: 6.63% of deaths reported during the year come under this age group. Accidents claiming 15.85% of deaths form the first major killer in this age group also. This is followed by heart diseases enteritis and other diarrhoeal diseases and diseases of nervous system and sense organs with 7.88%, 6.84%, 5.7% of deaths respectively.

25-34: 6.63% of deaths reported from the medical institutions in the town are in this age group. Heart diseases claiming 13.67% of deaths stands first as the major cause of death in this age group. Next to this comes accidents with 12.53% of deaths. Other prominent causes of death in this age group during the year are anaemias, cerebrovascular diseases and diseases of digestive system.

35-44: Deaths in this age group constitute 6.48% of the total deaths reported during the year. Heart disease continues to be the top most killer disease in this age group also. This disease group alone is responsible for 17.40% of deaths in this age group. Accidents and bacterial diseases are other significant causes of death in this age group.

45-54: 12.51% of total deaths come under this age group. Here also heart disease group continues as the first major cause of death. This disease alone is responsible for 30.20% of deaths in this age group. The incidence of tuberculosis and cerebrovascular disease is also high in this age-group. Bronchitis, emphysema and asthma group is responsible for 6.30% deaths in this age group. However, when all the age groups taken together the percentage of death due to this disease group falls below 4%.

55-64: 14.31% of deaths are included in this age group. Heart disease claiming 30.52% of deaths continue to be the first major cause of death in this age group also. Though cerebrovascular diseases are the second major cause of death in this age group, it is to be noted that the highest percentage of death (13.16%) due to this disease has occurred in this age group. This is followed by tuberculosis, diabetes mellitus and anemias which claim 7.36%, 5.27% and 4.74% of deaths respectively.

65-74 : 11.91% of total deaths are coming under this age group. As in the case of the previous four age groups the most outstanding cause of death in this age group is heart diseases. The percentage of death due to this disease found to be 34.18. Cerebrovascular disease occupies second place as major cause of death. Anaemias, neoplasms and bronchitis are other notable causes of death in this age group.

75 and above : This age group claims 5.65% of total deaths. The first major cause of death is heart disease which claims 34.22% of deaths in this age group. Deaths due to cerebrovascular diseases and bronchitis are also to be noted.

Diseases like tuberculosis, tetanus, bacterial diseases, neoplasms, diabetes, mellitus, avitaminoses and nutritional deficiency, meningitis, diseases of nervous system and sense organs, bronchitis and diseases of digestive system are not analysed in detail in this report as the percentage of death due to these diseases falls below 4%. However, the incidence of these diseases in certain age groups needs special attention. For Eg. the percentage of total deaths due to tetanus is only 1.73. But in the age group 5-14, 6.54% of deaths are due to tetanus alone. Again in the age group 1-4, 5-14 and 15-24, 13.16%, 6.54% and 5.70% of deaths respectively are reported to have occurred due to diseases of nervous system and sense organs. The percentage of total deaths occurred due to this disease is 1.73. Similarly the incidence of neoplasms and bronchitis among those in the age groups 45-54 and above is comparatively higher.

5.4 Religion-wise distribution of death due to leading causes

Table IV (3) shows the religion-wise distribution of deaths due to leading causes.

Of the 1327 death cases analysed, 67.89% are to Hindus, 15.67% to Christians and 16.44% to Muslims.

Among all the three religions the first major cause of death reported is heart diseases. But the percentage of death among each religion shows variation. It is the highest among Christians (20.19%) and the lowest among Muslims (11.01%).

Pneumonia stands second as the major cause of death among Hindus while among Christians, it is the enteritis and other diarrhoeal diseases and among muslims, the causes of perinatal morbidity and mortality which stand as the second leading cause of death. Percentage of death due to diseases of nervous system is the highest among Muslims during the year. Comparatively, deaths among Hindus due to bronchitis are found to be more during the year.

5.5 Domiciliary deaths

Table IV (4) furnishes details regarding 34 domiciliary deaths analysed during the year. Of the 34 cases collected 20.59% of deaths each were due to heart diseases, senility and paralysis, Asthma, gastro-enteritis and pneumonia are other causes of domiciliary deaths reported. Heart diseases have shown greater affinity towards males. Percentage of deaths due to senility is higher among females.

5.6 Summary of findings

1. The above analysis shows that during the year the highest percentage of death has occurred due to heart diseases. Further, this diseases shows greater affinity towards males.

TABLE 11(4)

Coverage statistics—1977

COCHIN

Cause of deaths	Hindu		Christians		Muslim		Total		Total
	M	F	M	F	M	F	M	F	
Gastro enteritis	1	..	..	..	..	..	1	..	1 (1.15)
Peptic ulcer	..	1	..	1	..	2	..	4	4 (4.59)
Tuberculosis of lungs	..	2	2	2	..	2	2	6	8 (9.19)
Asthma	4	3	4	2	..	..	8	5	13 (14.95)
Paralysis	1	2	..	..	..	..	1	2	3 (3.46)
Anaemia	3	..	..	1	..	..	3	1	4 (4.59)
Congenital heart diseases	3	..	..	..	..	..	3	..	3 (3.46)
Heart attack	7	3	3	..	2	..	12	3	15 (17.24)
Jaundice	..	1	1	..	..	..	1	1	2 (2.30)
Cancer	3	2	1	..	2	1	6	3	9 (10.34)
Diabetes	..	2	..	..	..	..	..	2	2 (2.30)
Hyper plasia	..	..	..	1	..	..	..	1	1 (1.15)
Senility	2	7	..	2	..	..	2	9	11 (11.64)
Other diseases	3	3	2	..	2	1	7	4	11 (12.64)
Total	27	26	13	9	6	6	46	41	87

(Figures in brackets show percentages)

4.1 Report on medical certification of cause of death in Calicut Corporation-1977

Causes of death pertaining to 3387 deaths, received from the medical institutions in the city are analysed in this report. Out of this, 63.8% are male cases and the remaining 36.2% female cases.

The following major causes of death which were responsible for 4% or more of the total reported death alone are discussed in detail in this report.

1. Tuberculosis (A 6-10)
2. Neoplasm (A 45-61)
3. Heart diseases (A81-84)
4. Cerebrovascular disease (A 85)
5. Diseases of digestive system (A 104)
6. Causes of perinatal morbidity and mortality (A 131-135)
7. Accidents (A 138-150)

4.2 Sex-wise distribution of deaths due to leading causes

Table III(1) provides the sex-wise distribution of deaths due to leading causes.

1. Tuberculosis

This disease accounts for 8.89% of deaths reported during the year. Deaths due to this disease among males are noted to be much higher than that among females; They are 9.82% and 7.26% respectively.

2. Neoplasms

7.50% of total deaths are reported to have occurred due to neoplasms. Here also male victims are much more than female victims, the percentage being 8.24 and 6.19 respectively.

3. Heart diseases

This is the most outstanding cause of death reported from the city hospitals. This disease group alone claims 12.81% of deaths during the year. Male victims of heart disease out-number female victims. The percentage of male death is 14.86. The corresponding figure for females is 9.21.

4. Cerebrovascular diseases

Deaths due to cerebrovascular disease form 5.49% of total reported deaths. 5.32% of male deaths and 5.79% female deaths are due to this disease.

5. *Diseases of digestive system*

4.34% of deaths are reported to have occurred due to diseases of digestive system. Male and female deaths come to 4.31% and 4.40% respectively.

6. *Causes of perinatal morbidity and mortality*

Deaths due to this set of diseases include still births and first week deaths. 6.47% of deaths reported during the year are due to these causes. Out of this, 6.02% are among male infants and 7.25% among female infants.

7. *Accidents*

Deaths on account of accidents form 7.03% of total deaths. As in the case of other cities, the percentage of death due to accidents are higher among males in this city also when the percentage of male deaths is 8.94% the corresponding figure for females is only 3.67%.

In addition to the diseases discussed above, diseases like enteritis and other diarrhoeal diseases, bacterial diseases, disease of nervous system and sense organs and pneumonia are found to be significant among females. Each of these diseases were responsible for more than 4% of deaths among females. However when males and females taken together, deaths due to these diseases fall below 4%.

4.3 **Age-wise distribution of death due to leading causes**

Table III(2) gives the agewise distribution of deaths due to leading causes.

0-1 (infant death):—15.65% of the deaths reported from medical institutions are infant deaths. It is seen that 41.32% of infant deaths are due to causes of perinatal morbidity and mortality alone. This is followed by bacterial diseases and pneumonia claiming 11.32% and 8.49% of deaths respectively.

1-4:—Deaths in this age group constitute 9.57% of total deaths. Tuberculosis with 13.27% of deaths to its credit stands first as the major killer disease in this age group during the year. This is followed by enteritis and other diarrhoeal diseases claiming 12.96% of deaths. Diseases of nervous system and sense organs and pneumonia are also found to be prominent in this age group.

5-14:—This age group claims 8.87% of deaths reported during the year. Diseases of nervous system and sense organs which claim 13.29% deaths stands first as the major cause of death in this age group. Accidents group claims 8.64% of deaths in this age group. This is followed by diseases of digestive system and tuberculosis, each claiming 6.98% of deaths. Enteritis and other diarrhoeal diseases, meningitis and tetanus are other notable causes of death in this age group. However, when all the age groups taken together, deaths due to these three diseases fall below 4%.

15-24:—7.59% of deaths come under this age group. Accidents alone claim 17.12% of deaths in this age group. This is followed by tuberculosis and heart diseases each claiming 7.39% of deaths. Deaths due to neoplasms, tetanus, diseases of digestive system and meningitis are also to be noted in this age group.

25-34:—8.39% of total deaths are reported to have occurred in this age group. Accident group claiming 16.55% of deaths stands as the first cause of death in this age group during the year. This is followed by tuberculosis with 13.03% of deaths. As in the case of the previous age group, heart diseases, diseases of digestive system, neoplasms and tetanus are other leading causes of death in this age group.

35-44:—10.69% of deaths reported during the year come under this age group. Heart diseases with 18.51% of deaths takes first place as the leading cause of death in this age group. This is followed by accidents claiming 12.98% of deaths. Tuberculosis, Neoplasms and diseases of digestive system are other leading causes of mortality in this age group.

45-54:—Deaths under this age group constitute 12.73% of the total deaths reported during the year. Heart diseases are responsible for more than 20% of deaths in this age group. This is followed by tuberculosis and neoplasms claiming 12.99% and 12.53% of deaths respectively.

55-64:—13.91% of mortality cases reported are coming under this age group. Heart disease continues to be the top most cause of death in this age group also; the percentage of death is 22.51. The second major cause of death is neoplasms (13.16%). Tuberculosis and cerebrovascular diseases are other significant diseases to be noted.

65-74:—This age group claims 8.87% of deaths. Heart disease holds first place as the major killer disease in this age group too. This disease alone is responsible for 23.59% of deaths. Cerebrovascular diseases (13.62%) and neoplasms (12.96%) also deserve to be placed as major causes of death in this age group.

75 to above:—3.72% deaths come under this age group. Here also heart diseases, cerebrovascular diseases and neoplasms continue as the first, second and third causes of death respectively.

4.4 Religion—wise distribution of death due to leading causes

Table III(3) furnishes the religion wise distribution of deaths due to leading causes.

Out of 3387 deaths reported from the medical institutions 60.44% are to Hindus, 35.22% to Muslims and 4.34% to Christians.

Among all the three religions, the highest percentage of death has occurred due to heart diseases.

Among Hindus and Muslims the second major cause of death is tuberculosis whereas among Christians it is the neoplasm.

The percentage of death due to causes of perinatal morbidity and mortality is comparative higher among Hindus and lower among Christians.

The percentage of death due to cerebrovascular disease is comparatively higher among Christians. So also with pneumonia and accidents. Similarly, the percentage of death due to enteritis and other diarrhoeal diseases and tetanus can be seen higher among Muslims during the year. It is also noted that percentage of death due to accidents and cerebrovascular diseases is comparatively lower among Muslims.

4.5 Domiciliary Death [Table II(4)]

Details relating to 179 deaths occurred at home to normal residents in the city are analysed. There are 101 male deaths and 78 female deaths. Out of this 32 deaths—12 male and 20 female are found to be due to diseases of nervous system and sense organs (A79). Heart diseases (A81-84) and tuberculosis are other important causes of domiciliary deaths. Both, tuberculosis as well as heart diseases show greater affinity towards males. Deaths due to diseases of nervous system and sense organs are comparatively more among females. Bronchitis, emphysema and asthma (A93) are another important cause of domiciliary deaths. Female victims of this disease are more than male victims. Victims of cerebrovascular diseases are more among males during the year. Male deaths due to anoxic and hypoxic conditions peculiar to early infancy are comparatively larger. 13.41% of domiciliary deaths collected are due to symptoms and other ill defined conditions (A137)

4.6 Summary of Findings

- (1) The most outstanding cause of death among children is causes of Perinatal morbidity and mortality. 41.32% of infant deaths are due to this cause alone.
- (2) Percentage of deaths due to heart diseases shows an increasing tendency with age groups. From the age group 35-44 and above this is the number one killer disease.
- (3) Deaths due to cerebrovascular diseases and neoplasms are also comparatively more among higher age groups.
- (4) Male victims of heart diseases, tuberculosis and neoplasms are found to be more than that of females.

- (5) Mortality due to accidents is very high in the age groups 15-24 and 25-34.
 - (6) Deaths due to certain diseases like enteritis and other diarrhoeal diseases, bacterial diseases, meningitis diseases of nervous system and sense organs and pneumonia are noted to be very common among children. However when all the age groups taken together percentage of death due to each of these diseases is below 4%.
 - (7) Diseases of digestive system has shown greater affinity towards the age groups 5-15 to 45-54 during the year. Frequency of death due to this disease is found to be high in these age groups.
 - (8) Diseases of nervous system and sense organs, tuberculosis and heart diseases are the main causes of domiciliary deaths in the city during the year.
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TABLE III (1)

Statement showing the leading causes of death according to sex for
Calicut Corporation 1977

Code No.	Cause of death	Male	Female	Total
A5	Enteritis and other diarrhoeal diseases	62 (2.87)	54 (4.40)	116 (3.42)
A6-10	Tuberculosis	212 (9.81)	89 (7.25)	301 (8.89)
A20	Tetanus	43 (1.99)	41 (3.34)	84 (2.48)
A21	Other bacterial diseases	54 (2.50)	51 (4.16)	105 (3.10)
A45-61	Neoplasma	178 (8.24)	76 (6.19)	254 (7.50)
A64	Diabetes mellitus	52 (2.41)	18 (1.47)	70 (2.07)
A65	Avitamenosis and other nutritional deficiency	27 (1.25)	20 (1.63)	47 (1.39)
A67	Anaemias	50 (2.31)	33 (2.69)	83 (2.45)
A72	Meningitis	51 (2.36)	41 (3.34)	92 (2.72)
A79	Other diseases of nervous system and sense organs	71 (3.29)	58 (4.73)	129 (3.81)
A81-84	Heart diseases	321 (14.86)	113 (9.21)	434 (12.81)
A85	Cerebrovascular diseases	115 (5.32)	71 (5.79)	186 (5.49)
A92	Pneumonia	63 (2.92)	63 (5.13)	126 (3.72)
A93	Bronchitis emphysema and asthma	54 (2.50)	30 (2.44)	84 (2.48)
A104	Other diseases of digestive system	93 (4.31)	54 (4.40)	147 (4.34)
A131-135	Causes of perinatal morbidity and mortality	130 (6.02)	89 (7.25)	219 (6.47)
A137	Symptoms and other ill defined conditions	52 (2.41)	37 (3.02)	89 (2.63)
A138-150	Accidents	193 (8.94)	45 (3.67)	238 (7.03)
	Others	339 (15.69)	244 (19.89)	583 (17.21)
	Total	2160 (100)	1227 (100.00)	3387 (100.00)

(Figures in brackets indicate percentage)

TABLE III (2)

Statement showing the leading causes of death occurred in Calicut Corporation according to age group for 1977

Code No.	Cause of death	Less than										75 & above	Total
		1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	(12)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
A 5	Enteritis and other diarrhoeal diseases	21 (3.96)	42 (12.96)	18 (5.98)	4 (1.56)	6 (2.11)	6 (1.66)	7 (1.67)	6 (1.27)	4 (1.33)	2 (1.59)	116 (3.42)	
A6-10	Tuberculosis	9 (1.70)	43 (13.27)	21 (6.98)	19 (7.39)	37 (13.03)	45 (12.43)	56 (12.99)	49 (10.40)	16 (5.32)	6 (4.76)	301 (8.89)	
A 20	Tetanus	14 (2.64)	7 (2.16)	17 (5.65)	13 (5.06)	13 (4.58)	9 (2.49)	4 (0.93)	4 (0.85)	2 (0.66)	1 (0.79)	84 (2.48)	
A 21	Other bacterial disease	60 (11.32)	10 (3.09)	6 (2.33)	5 (1.95)	6 (2.11)	6 (1.66)	2 (0.46)	7 (1.49)	3 (1.99)	..	105 (3.10)	
A 45-61	Neoplasmas	..	8 (2.47)	12 (3.99)	19 (7.36)	15 (5.28)	36 (9.94)	54 (12.53)	62 (13.16)	39 (12.96)	9 (7.14)	254 (7.50)	
A 64	Diabetes mellitus	..	1 (0.31)	1 (0.33)	4 (1.54)	6 (2.11)	9 (2.49)	16 (3.72)	21 (4.46)	12 (3.99)	..	70 (2.07)	
A 65	Avitaminosis and other nutritional deficiency	14 (2.64)	14 (4.32)	5 (1.66)	1 (0.39)	1 (0.35)	3 (0.83)	3 (0.69)	3 (0.64)	2 (0.66)	1 (0.79)	47 (1.39)	
A 67	Anaemias	1 (0.19)	9 (2.78)	3 (0.99)	3 (1.16)	3 (1.06)	13 (3.99)	13 (3.02)	15 (3.18)	20 (6.64)	3 (2.38)	83 (2.45)	
A 72	Meningitis	21 (3.96)	10 (3.09)	18 (5.98)	11 (4.25)	9 (3.17)	10 (3.07)	4 (0.93)	6 (1.27)	2 (0.66)	1 (0.79)	92 (2.72)	
A 79	Other diseases of nervous system and sense organs	12 (2.26)	38 (11.73)	40 (13.29)	7 (2.70)	6 (2.11)	12 (3.99)	4 (0.93)	7 (1.49)	2 (0.66)	..	129 (3.81)	

35-44: 8.03% of deaths come under this age group. Tuberculosis claiming 16.84% of deaths stands first as the major cause of death in this age group. This is followed by heart diseases with 13.68% of deaths. Other leading causes of death reported are accidents, diseases of digestive system and cerebrovascular diseases.

45-54: This age group encounters 13.86% of deaths during the reference year. Heart diseases group alone claims 25% of deaths in this age group. The second major cause of death is tuberculosis with 12.19% of deaths to its credit. Neoplasms and diabetes mellitus are other causes of death to be noted in this age group.

55-64: This age group accounts for 15.98% of deaths reported during the year. As in the case of the previous age group, here also we see heart diseases occupying the topmost position as the major cause of death. 20.63% of deaths in this age group go to the credit of this group of diseases alone.

65-74: Deaths in this age group constitute 10.99% of total deaths. Heart diseases group claiming 38.46% of deaths continues to be the first major cause of death in this age group also. Other prominent causes of death noted are cerebrovascular diseases, tuberculosis, accidents and diseases of digestive system.

75 & Above: 3.30% of total deaths have occurred to those in the age group 75 and above. Heart diseases claiming 23.21% of deaths are the first major cause of death in this age group. This is followed by cerebrovascular disease which claims 25.64% of deaths. Neoplasms and bronchitis and asthma are the other notable causes of death in this age group.

6.4. Religion wise distribution of death due to leading causes

Table V (3) furnishes the religion wise distribution of death due to leading causes.

55% of the death case analysed in this report were among Hindus, 22% among Christians and 23% among Muslims.

Heart disease group tops the list of leading causes of death among all the three religions. Similarly the second major cause of death among all the three religions is tuberculosis. However, the percentage of death is slightly higher for Hindus. The third major cause of death among Hindus and Christians is accidents. In the case of Muslims it is the enteritis and other diarrhoeal diseases which falls third place as the leading cause of death. Deaths due to accidents are found to be comparatively lower among Muslims. Another leading cause of death noted is diseases of nervous system and sense organs. The victims are comparatively more among Hindus. During the year deaths reported due to neoplasms are more among Hindus and that due

to bacterial diseases are among Christians. Compared to other religions, the percentage of death due to bronchitis is higher among Muslims. Among Hindus the percentage of death due to cerebrovascular diseases is found to be high.

6.5 Domiciliary deaths

Table V (4) gives the details regarding domiciliary deaths collected during the year.

Altogether causes of 47 deaths—27 males and 20 females were collected.

Tuberculosis, heart failure, asthma and cancer are the most important causes reported. Deaths due to heart attack are found to be comparatively more among males. Out of 27 male deaths and 20 female deaths analysed 4 deaths each are due to tuberculosis. 5 deaths are due to asthma. The percentage of male and female deaths due to asthma being 11 and 10 respectively. Deaths due to cancer are also more among males. Rheumatism, fits, diabetes, accidents etc., are other causes of domiciliary deaths.

6.6. Summary of findings

1. 24.21% of infant mortality cases occurred due to bacterial diseases. This is followed by pneumonia, perinatal causes of morbidity and mortality and tetanus.
2. Children under 1-14 are mostly the victims of diseases of nervous system and sense organs and enteritis and other diarrhoeal diseases. Pneumonia and heart diseases are other notable causes of deaths reported under this age group.
3. Deaths due to accidents are seen to be very high in the age groups 15-24 and 25-34.
4. The incidence of tuberculosis is the highest in the age group 35-44.
5. Heart diseases dominate all the age groups. However, this domination is very clear in the age groups 25-34 and above. In the age groups 45-54 and above this is the topmost cause of death—Male victims of heart diseases are more than female victims.
6. Heart failure and tuberculosis are found to be two causes of domiciliary deaths reported during the year.

TABLE V(1)

Statement showing the leading cause of death occurred in Alleppey Municipality sex-wise distribution—1977

Code No.	Cause of death	Male	Female	Total
A5	Enteritis and other diarrhoeal diseases	27 (3.73)	25 (5.45)	52 (4.40)
A6-10	Tuberculosis	71 (9.81)	31 (6.75)	102 (8.62)
A20	Tetanus	9 (1.24)	14 (3.05)	23 (1.94)
A21	Other Bacterial diseases	20 (2.76)	29 (6.32)	49 (4.14)
A45-61	Neoplasm	34 (4.70)	10 (2.18)	44 (3.72)
A64	Diabetes Mellitus	15 (2.07)	11 (2.40)	26 (2.20)
A55	Avitaminosis and other nutritional deficiency	13 (1.80)	9 (1.96)	22 (1.86)
A67	Anaemias	9 (1.24)	8 (1.74)	17 (1.44)
A72	Meningitis	23 (3.18)	13 (2.83)	36 (3.04)
A79	Other diseases of nervous system and sense organs	43 (5.94)	29 (6.32)	72 (6.09)
A81-84	Heart diseases	127 (17.54)	71 (15.47)	198 (16.74)
A85	Cerebrovascular diseases	35 (4.83)	28 (6.10)	63 (5.33)
A92	Pneumonia	23 (3.18)	16 (3.49)	39 (3.30)
A93	Bronchitis emphysema & Asthma	18 (2.49)	13 (2.83)	31 (2.62)
A104	Other diseases of digestive system	36 (4.97)	15 (3.27)	51 (4.31)
A131-135	Causes of perinatal morbidity and mortality	4 (0.55)	5 (1.09)	9 (0.76)
A137	Symptoms of other ill-defined conditions	53 (7.32)	17 (3.70)	70 (5.92)
A138-150	Accidents	59 (8.15)	22 (4.79)	81 (6.85)
	Others	105 (14.50)	93 (20.26)	198 (16.74)
	Total	724 (100.00)	459 (100.00)	1183 (100.00)

(Figures in brackets indicate percentages)

TABLE V (2)

Statement showing the leading causes of death occurred in Alleppey Municipality according to age groups during the year 1977

Code No.	Cause of death	Less than 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75 & above	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
A 5	Enteritis and other diarrhoeal diseases	2 (2.11)	24 (14.12)	18 (14.40)	3 (3.30)	..	1 (1.05)	1 (0.61)	..	2 (1.54)	1 (2.56)	52 (4.40)
A 6-10	Tuberculosis	2 (2.11)	6 (3.53)	9 (7.20)	8 (8.79)	8 (9.41)	16 (16.84)	20 (12.19)	24 (12.69)	8 (6.15)	1 (2.56)	102 (8.62)
A 20	Tetanus	9 (9.47)	3 (1.76)	3 (2.40)	4 (4.39)	1 (1.18)	1 (1.05)	..	1 (0.53)	1 (0.77)	..	23 (1.94)
A 21	Other bacterial diseases	23 (24.21)	13 (7.65)	6 (4.80)	1 (1.10)	4 (4.70)	1 (1.05)	..	1 (0.53)	..	..	49 (4.14)
A 45-61	Neoplasm	..	2 (1.18)	2 (1.60)	..	2 (2.35)	3 (3.16)	10 (6.10)	19 (10.05)	3 (2.31)	3 (7.69)	44 (3.72)
A 64	Diabetes mellitus	..	..	..	4 (4.40)	2 (2.35)	2 (2.11)	9 (5.49)	6 (3.17)	3 (2.31)	..	26 (2.20)
A 65	Avitaminosis and other nutritional deficiency	..	10 (5.88)	3 (2.40)	1 (1.10)	..	..	3 (1.83)	1 (0.53)	4 (3.07)	..	22 (1.86)
A 67	Anaemias	..	..	2 (1.60)	2 (2.20)	..	..	4 (2.44)	4 (2.12)	5 (3.85)	..	17 (1.44)
A 72	Meningitis	5 (5.26)	5 (2.94)	9 (7.20)	2 (2.20)	1 (1.18)	2 (2.11)	3 (1.83)	6 (3.17)	3 (2.31)	..	36 (3.04)

A 79	Other diseases of nervous system and sense organs	4	33	20	4	2	1	3	1	2	2	72
		(4.21)	(19.41)	(16.00)	(4.40)	(2.35)	(1.05)	(1.83)	(0.53)	(1.54)	(5.13)	(6.09)
A 81-84	Heart diseases	6	11	7	6	14	13	41	39	50	11	193
		(6.33)	(6.47)	(5.60)	(6.59)	(16.47)	(13.68)	(25.00)	(20.63)	(38.46)	(28.21)	(16.74)
A 85	Cerebrovascular diseases	..	1	3	1	3	4	11	16	14	10	63
			(0.59)	(2.40)	(1.10)	(3.52)	(4.21)	(6.71)	(8.47)	(10.77)	(25.64)	(5.33)
A 92	Pneumonia	10	9	7	3	1	2	1	6	..	..	39
		(10.53)	(5.29)	(5.60)	(3.30)	(1.18)	(2.10)	(0.61)	(3.17)	..	..	(3.30)
A 93	Bronchitis emphysema and asthma	2	13	2	..	..	..	3	5	2	2	31
		(2.11)	(7.65)	(1.60)	..	..	..	(1.83)	(2.65)	(1.54)	(5.13)	(2.62)
A 104	Other diseases of digestive system	1	2	5	4	5	9	11	7	6	1	51
		(1.05)	(1.17)	(4.00)	(4.39)	(5.88)	(9.48)	(6.71)	(3.70)	(4.62)	(2.56)	(4.31)
A 131 135	Causes of perinatal morbidity and mortality	9	..	..	..	..	..	..	..	..	..	9
		(9.47)										(0.76)
A 137	Symptoms and other ill-defined conditions	4	3	..	3	5	9	12	20	11	3	70
		(4.21)	(1.76)	..	(3.30)	(5.88)	(9.48)	(7.31)	(10.58)	(8.46)	(7.69)	(5.92)
A 138 150	Accidents	1	..	5	21	19	10	8	9	7	1	81
		(1.05)	..	(4.00)	(23.07)	(22.35)	(10.52)	(4.88)	(4.76)	(5.38)	(2.56)	(6.85)
	Others	17	35	24	24	18	19	24	24	9	4	193
		(17.89)	(20.59)	(19.20)	(26.37)	(21.18)	(20.00)	(14.63)	(12.70)	(6.92)	(10.27)	(16.74)
	Total	95	170	125	91	85	95	164	189	130	39	1183
		(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Figures in brackets indicate percentages

TABLE V(3)

Statement showing the leading causes of death occurred in Alleppey Municipality according to Religion for 1977

Code No.	Cause of death	Hindu	Christian	Muslim	Total
A5	Enteritis and other diarrhoeal diseases	27 (4.12)	8 (3.09)	17 (6.34)	52 (4.40)
A6-10	Tuberculosis	60 (9.16)	22 (8.49)	20 (7.46)	102 (8.62)
A20	Tetanus	8 (1.22)	5 (1.93)	10 (3.73)	23 (1.94)
A21	Other bacterial diseases	26 (3.96)	13 (5.02)	10 (3.73)	49 (4.14)
A45-61	Neoplasm	29 (4.42)	10 (3.86)	5 (1.87)	44 (3.72)
A64	Diabetes mellitus	19 (2.89)	3 (1.16)	4 (1.49)	26 (2.20)
A65	Avitaminosis & other nutritional deficiency	14 (2.13)	5 (1.93)	3 (1.12)	22 (1.86)
A67	Anaemias	7 (1.07)	5 (1.93)	5 (1.87)	17 (1.44)
A72	Meningitis	24 (3.66)	7 (2.70)	5 (1.87)	36 (3.04)
A79	Other diseases of nervous system & sense organs	42 (6.40)	16 (6.18)	14 (5.22)	72 (6.09)
A81-84	Heart diseases	103 (15.70)	47 (18.13)	48 (17.91)	198 (16.74)
A85	Cerebrovascular diseases	42 (6.40)	10 (3.86)	11 (4.11)	63 (5.36)
A92	Pneumonia	23 (3.52)	8 (3.09)	8 (2.99)	39 (3.30)
A93	Bronchitis emphysema & Asthma	14 (2.13)	4 (1.55)	13 (4.85)	31 (2.62)
A104	Other diseases of digestive system	27 (4.12)	14 (5.41)	10 (3.73)	51 (4.31)
A131-135	Other causes of perinatal morbidity and mortality	4 (0.61)	3 (1.16)	2 (0.75)	9 (0.76)
A137	Symptoms and other ill-defined conditions	30 (4.57)	14 (5.42)	26 (9.70)	70 (5.92)
A138-150	Accidents	48 (7.32)	17 (6.56)	16 (5.97)	81 (6.85)
	Others	109 (16.61)	48 (18.53)	41 (15.29)	198 (16.74)
	Total	656 (100.00)	259 (100.00)	268 (100.00)	1183 (100.00)

TABLE V (4)

Coverage—Statistics—Alleppey Municipality

	<i>Hindu</i>		<i>Christian</i>		<i>Muslim</i>		<i>Total</i>		<i>Total</i>
	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	<i>M</i>	<i>F</i>	
Respiratory diseases	1	1	..	..	..	..	1	1	2 (4.25)
Poisoning	..	..	1	..	..	..	1	..	1 (2.13)
Tuberculosis	2	2	..	2	2	..	4	4	8 (17.02)
Asthma	1	1	1	..	1	1	3	2	5 (10.65)
Cancer	1	1	1	..	1	..	3	1	4 (8.50)
Mental diseases	..	..	..	..	1	..	1	..	1 (2.13)
Diabetes	2	..	..	..	..	..	2	..	2 (4.25)
Heart attack	4	1	1	..	..	1	5	2	7 (14.91)
Dysentry	..	..	1	..	..	..	1	..	1 (2.13)
Pneumonia	..	1	..	..	..	..	..	1	1 (2.13)
Fever	..	1	..	1	..	1	..	3	3 (6.38)
Fits	..	..	..	1	1	..	1	1	2 (4.25)
Rheumatism	1	..	..	1	..	1	1	2	3 (6.38)
Suicide	1	..	..	..	..	..	1	..	1 (2.13)
Accident	..	1	..	..	1	..	1	1	2 (4.25)
Tetanus	1	..	..	..	..	..	1	..	1 (2.13)
Swelling	..	..	1	1	..	..	1	1	2 (4.25)
Intestine trouble	..	..	..	1	..	..	..	1	1 (2.13)
Total	14	9	6	7	7	4	27	20	47 (100.00)

7.1. A Comparative study of leading causes of death in the five centres

An inter-city comparison of the leading causes of death in the five centres under the scheme, i.e. Trivandrum, Cochin, Calicut, Quilon and Alleppey is attempted in the following paragraphs.

The figures furnished in Table VI (i) show the percentage of death due to major causes reported from the hospitals in Trivandrum, Cochin, Calicut, Quilon and Alleppey.

TABLE—VI (i)

Sl. No.	Causes of death	Trivandrum	Cochin	Calicut	Quilon	Alleppey
1	Heart diseases	15.21	16.58	12.81	17.56	16.74
2	Tuberculosis	4.51	7.49	8.89	3.92	8.62
3	Neoplasms	7.09	10.94	7.50	2.19	3.72
4	Enteritis and other diarrhoeal diseases	6.12	2.02	3.42	4.07	4.40
5	Cerebrovascular diseases	3.28	6.73	5.49	5.53	5.33
6	Causes of perinatal morbidity and mortality	8.95	6.07	6.47	4.75	0.76

It is understood from the table that heart diseases were the first major cause of death in all the centres during the year under report. However, the percentage of death due to this set of diseases varies from city to city; the highest percentage of death reported from Quilon and the lowest from Calicut. Contrary to this, the highest percentage of death due to tuberculosis is reported from Calicut and the lowest from Quilon.

The percentage of death reported due to neoplasms is comparatively higher in Cochin Corporation and lower in Quilon Municipality.

Trivandrum Corporation recorded the highest percentage of death due to enteritis and other diarrhoeal diseases. The victims of this set of diseases were comparatively lower in the other two corporations during the year.

Deaths due to cerebrovascular diseases are found to be relatively lower in Trivandrum Corporation and higher in Cochin Corporation. More than 5% of deaths have occurred due to this disease in all the centres except Trivandrum.

Causes of perinatal morbidity and mortality can be noted as the first major cause of infant mortality in all the centres except Alleppey. Trivandrum registers 8.95% of total deaths due to this cause alone. This will come to more than 40% of infant deaths.

Sex-wise comparison of deaths due to leading causes in Trivandrum Cochin, Calicut, Quilon and Alleppey

TABLE--VI (2)

Sl. No.	Causes of death	Trivandrum		Cochin		Calicut		Quilon		Alleppey	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	Heart diseases	17.11	12.58	18.39	13.58	14.86	9.21	20.59	13.54	17.54	15.47
2	Tuberculosis	4.94	3.95	8.58	5.69	9.81	7.25	3.73	4.18	9.81	6.75
3	Neoplasms	6.84	7.53	10.77	11.24	8.24	6.19	2.06	2.36	4.70	2.18
4	Enteritis and other diarrhoeal diseases	6.27	5.97	1.58	2.77	2.87	4.40	3.47	4.91	3.74	5.45
5	Cerebrovascular diseases	2.92	3.77	6.66	6.86	5.32	5.79	3.86	8.00	4.83	6.10
6	Causes of perinatal morbidity and mortality	9.19	8.72	5.25	7.45	6.02	7.25	3.86	6.00	0.55	1.09

Table VI (2) gives the figures (in percentage) relating to deaths due to leading causes among males and females in the five centres

The incidence of heart diseases on males is higher in all the centres. In Quilon 20.59% of male deaths were due to this disease alone. The corresponding figure for females was only 13.27%. There is marked difference in the percentage of death among males and females due to this disease in all the five places.

Deaths due to tuberculosis are comparatively more among males in all the centres except Quilon. In Quilon a slightly higher percentage of death due to this disease is recorded among females.

In Trivandrum, Cochin and Quilon female victims of neoplasm are found to be comparatively more while in Calicut and Alleppey it is the reverse.

Enteritis and other diarrhoeal diseases have shown more affinity towards females in all the centres except Trivandrum.

The percentage of death among females due to cerebrovascular disease is seen higher in all the centres. This is clearly marked in Quilon.

No generalisation can be made with regard to the sex affinity of causes of perinatal morbidity and mortality. However, it can be said that during the report year, in most of the centres female infants were more exposed to the risk of death due to this cause. Trivandrum is the only exception to this.

7.3. Religion-wise comparison of deaths due to leading causes

Deaths (in percentages) due to leading causes among the three religions are shown in Table VI-3.

TABLE VI(3)

Sl.No.	Diseases	Trivandrum				Cochin				Calicut				Quilon				Alleppey			
		H		M		H		M		H		M		H		M		H		M	
		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)					
1.	Heart diseases	15.62	15.79	13.85	14.85	19.40	15.29	13.53	11.56	11.74	18.52	20.19	11.01	15.70	18.13	17.91					
2.	Tuberculosis	4.74	5.26	2.36	7.31	6.02	10.98	8.50	6.12	9.89	4.11	5.29	1.83	9.16	8.49	7.46					
3.	Neoplasms	7.13	7.31	7.43	10.78	12.78	7.62	7.67	8.84	7.04	2.22	1.92	2.29	4.42	3.86	1.87					
4.	Cerebrovascular diseases	3.29	3.51	3.04	5.99	8.57	4.88	5.86	7.48	4.61	5.66	5.29	5.50	6.40	6.18	5.22					
5.	Enteritis and other diarrhoeal diseases	6.18	6.14	5.40	2.62	1.20	2.13	3.08	2.72	4.11	3.55	6.25	4.13	4.12	3.09	6.34					
6.	Causes of Perinatal mortality and mortality	8.53	9.65	11.49	6.59	5.41	6.10	6.89	2.72	6.20	4.11	3.85	8.26	0.61	1.16	0.76					

It is not easy to draw a general conclusion regarding the affinity of diseases towards a particular religion. The percentage of death reported from the medical institutions in the cities due to major diseases varies from religion to religion and city to city.

We have already seen that among all the religions the most dreadful disease during the year was heart diseases. Relatively, the percentage of death due to this disease was higher among Christians in all the centres except Calicut. In Calicut it was the highest among Hindus and lowest among Christians. The percentage of death due to tuberculosis reported from Cochin Corporation is the highest among Muslims. The lowest percentage of death due to tuberculosis is reported among Muslims from Quilon.

Neoplasm is noted to be the second leading cause of death during the year. The percentage of death due to this deadly disease is comparatively lower in Quilon and Alleppey among all the three religions. Similarly, deaths due to cerebrovascular diseases were comparatively lower among all the three religions in Trivandrum. The highest percentage was recorded among Christians in Cochin Corporation. The highest percentage of death due to enteritis was registered in Alleppey among Muslims and the lowest in Cochin among Christians. More deaths due to causes of perinatal morbidity and mortality were reported from Trivandrum. Deaths reported from Alleppey due to this set of diseases were not very significant.

TABLE VI (4)

Comparative study of deaths due to major causes during 1975, 1976 and 1977 in Trivandrum, Cochin, Calicut, Quilon and Alleppey

Sl.No.	Diseases	Trivandrum			Cochin			Calicut			Quilon			Alleppey		
		1975	1976	1977	1975	1976	1977	1975	1976	1977	1975	1976	1977	1975	1976	1977
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1.	Heart diseases	15.69	15.58	15.21	14.70	17.23	16.59	9.95	11.01	12.81	14.07	14.04	17.56	12.53	15.41	16.74
2.	Tuberculosis	3.90	3.41	4.51	8.89	9.63	7.49	8.12	8.90	8.89	3.96	5.34	3.92	9.13	8.44	8.62
3.	Neoplasms	7.71	8.26	7.09	7.16	8.26	10.94	8.71	10.37	7.49	2.59	3.08	2.19	2.86	4.95	3.72
4.	Cerebrovascular diseases	3.67	3.91	3.28	5.17	5.35	6.73	4.26	4.53	5.49	4.71	5.21	4.58	4.24	4.50	5.33
5.	Enteritis and other diarrhoeal diseases	5.55	5.55	6.12	3.43	1.26	2.02	6.29	5.20	3.42	4.63	3.21	4.07	7.20	5.50	4.40
6.	Causes of perinatal morbidity & mortality	6.93	6.62	8.95	4.30	3.57	6.07	6.38	4.75	6.47	4.51	5.47	4.75	..	..	1.01

During the years 1975, 1976 and 1977 heart disease was the first leading killer in all the five centres under report. Further a continuous rise in the percentage of death due to this disease is noted in Calicut and Alleppey. In Quilon the rate has increased during 1977 after a slight reduction in 1976. Trivandrum registers a slight fall in the percentage. In Cochin the percentage of death due to heart diseases increased during 1976 but suddenly decreased in 1977.

The percentage of death due to tuberculosis shows a fluctuating tendency during these years in all the five centres. The incidence of neoplasm is on the rise in Cochin while in other four places it is fluctuating over years. The incidence of cerebrovascular disease is on the rise in all the centres except Trivandrum where it is fluctuating.

In Calicut and Alleppey mortality due to enteritis and other diarrhoeal diseases shows a slight fall while in other cities it is fluctuating.

Compared to the previous two years, the incidence of causes of perinatal morbidity and mortality is found to be very high in all the centres during 1977.

Summary of findings in brief

The incidence of causes of perinatal morbidity and mortality, pneumonia, bacterial diseases, enteritis and other diarrhoeal diseases, tetanus, tuberculosis and avitaminosis and other nutritional deficiency was very high among infants and children.

The most dreadful cause of death during the year was heart diseases especially among those in the age groups 35-44 and above.

Mortality due to accidents was very high in the age groups 15-24 and 25-34 in all the five centres during the year.

The incidence of neoplasm was very high in the middle age groups.

The victims of cerebrovascular disease were seen mostly in the age groups above 45.

It may be noted that malnutrition among children, pregnant women and nursing mothers is directly or indirectly responsible for a very high percentage of deaths among infants and children below 5 years. Infection is another important cause of death found among children. This requires high priority for immunisation of children against tetanus, polio, diphtheria and tuberculosis.

We find heart diseases dominating in all the five centres especially among male grown ups. Considering this, more intensive cardiac units have to be started in the hospitals.

High mortality due to neoplasm highlights the need for taking effective steps for prevention, early diagnosis and improved treatment of this dreaded disease.

More sanitary facilities may be provided in unhealthy, overcrowded, dingy areas in the cities. An environment improvement programme including protected water supply scheme, sewage and provision of community latrines may be launched. As diseases like chronic bronchitis, pulmonary emphysema, asthma and diseases of digestive system are mainly due to intake of polluted air and water, steps may be taken, at least, to avoid further pollution of air and water in the residential areas of the cities.

Conclusion

This analysis shows that the problems confronting all the five local bodies are of the same nature. The problem of health of mother, child and family as well as the issue of high infant mortality figured as key points of concern. All these factors which have inimical effect on the society are compounded by a range of socio-economic factors.

The action needed to be taken to combat the leading causes of death is two fold; one is the necessity to provide adequate facilities in the hospitals to save those who suffer from the leading causes and the other is to intensify health care activities so as to prevent the attack of such diseases. Preventive methods have to get more attention in the hospitals and other public health institutions. Out disease-and-hospital oriented health care system have to be supplemented with routine health education programmes.

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