

**MEDICAL CERTIFICATION OF  
CAUSE OF DEATH**

**Report No. II**

**DIRECTORATE OF ECONOMICS AND STATISTICS**

**1980**

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**DIRECTORATE OF ECONOMICS & STATISTICS  
KERALA STATE**

**MEDICAL CERTIFICATION OF  
CAUSE OF DEATH**

**REPORT No. II**

**Report on cause of Death Medically Certified in certain  
Hospitals in Trivandrum, Cochin, Calicut,  
Quilon and Alleppey—1976**

## PREFACE



In our State, the scheme of 'medical certification' in the Corporations of Trivandrum, Cochin and two major Municipalities of Quilon and Alleppey. This report is a collection of data relating to causes of death certified in the hospitals. This combined report on causes of death medically certified in the hospitals in the above five urban centres for the year 1976 is 11th 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 Disease (1965 Revision Vol. I) This is done by the Deputy Health Officers in the respective centres. This combined 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. Raveendranadhan Nair |
| 2. Cochin     | P. Vasudevan            |
| 3. Calicut    | M. Sreeraman            |
| 4. Quilon     | P.A. Kunjammutty        |
| 5. Alleppey   | P. K. Pankajakshan      |

This report will help the study of changing pattern of mortality and the relative importance of various diseases. Public Health and Medical authorities also may find this report useful. However, while using the results of this study, it may be kept in mind that this report pertains to only 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 was prepared by Smt C. Zainaba, Assistant Director with the assistance of statistical staff in the Model Registration Unit and under the guidance of Sri S. Sthanukrishna Iyer, Deputy Director.

Trivandrum,  
18-6-1980.

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. Not only health planning but 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.

Mortality data are also required in the estimation of probable effects of eliminating certain diseases. For sound and realistic planning of medical and public health programmes and for the proper appreciation of the health situation, reliable information on health and diseases is necessary. 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 cities/towns.

In the State, the scheme was first introduced in Trivandrum Corporation in 1969. Later, it was extended to the Corporations of Cochin and Calicut and the major municipalities of Quilon and Alleppey. A Deputy Health Officer has been appointed in each of the local bodies for the organisation and efficient implementation of the scheme. He is a para-medical officer having special training in the collection and compilation of cause of death statistics. He is assisted by one Research Assistant and two Compilers.

This report deals with the statistical analysis of the medically certified causes of death in the above five local bodies during the year 1976. Institutional deaths certified by the attending medical practitioners are analysed for the purpose of evaluating the changing pattern of mortality due to various diseases.

As a result of the successful implementation of the disease control and eradication programmes, death rate in the State has considerably declined. The major 'Killers' 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. Thus the morbidity pattern is fast changing. The data on causes of death medically certified in hospitals, though they suffer from a number of deficiencies, give an overall picture of the pattern of mortality prevalent in the State.

### 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 cause of death certificates received from the medical institutions are scrutinised and the causes of death 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.

## 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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Normal residence (for infant born in Institution, residence of mother before admission)	Age in years last birth day	If under one year		If under 24 hours	
		Months	Days	Hours	Minutes

## CAUSE OF DEATH

\* Cause of death      Code No.      Appropriate interval  
between onset and death

## 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.

.....  
.....

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



*If deceased 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:

#### 1.4 Causes of death

Cause of death is defined as the morbid condition or disease process abnormality, injury or poisoning leading directly or indirectly to death. Every death has multiple causes and death occurs only as a result of a chain of causes. The 20th century World Health Assembly instructed that the cause of death to be entered in medical certificates should cover all diseases, morbid conditions or injuries which either resulted or contributed to death and the circumstances of accidents or violence which produced such injuries.

#### *Leading causes of death:*

In this report, only the causes of death which account for at least 3% of deaths in any one or more of the five centres are analysed in detail. The causes of death which are insignificant to be taken separately are grouped under 'others'. Thus the following diseases are considered as the leading causes of death.

1. Enteritis and other diarrhoeal diseases (A5)
2. Tuberculosis (A6-10)
3. Tetanus (A20)
4. Bacterial diseases (A21)
5. Neoplasms (A45-61)

6. Diabetes mellitus (A64)
7. Anaemias (A67)
8. Meningitis (A72)
9. Diseases of nervous system (A79)
10. Heart diseases (A81-84)
11. Cerebrovascular diseases (A85)
12. Pneumonia (A92)
13. Diseases of digestive system (A104)
14. Perinatal causes of morbidity and mortality (A131-135)
15. Symptoms and other illdefined conditions (A137)
16. Accidents (A138-150)

### 1.5 *Domiciliary deaths*

The report is mainly intended to analyse the cause 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 as the causes of death reported from the medical institutions may not be representative of the community, and as the leading causes of domiciliary deaths may not be the same as those of hospital deaths we have attempted in this report to extend the coverage and to make a realistic assessment of the leading causes of death in the society 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 *Limitation of the reports*

The data analysed in this report cover mainly the institutional deaths reported by the attending physicians. The institutional deaths constitute only a small portion of total deaths in the concerned areas. Further, the domiciliary deaths included were not medically certified. Despite the limitations, this analysis can give a broad picture of the mortality pattern of the areas covered by the report.

At first causes of death medically certified in the individual cities are analysed separately in this report. An attempt is also made for an inter-city comparison of major killer diseases.

## 2. 1 *Medical certification of cause of death in Trivandrum Corporation 1976*

The following are the medical institutions in the city covered under the scheme. Number of medical notification forms received is also noted against each.

<i>Sl. No.</i>	<i>Name of medical institution</i>	<i>No. of notification forms received</i>
1.	Medical College Hospital, Ulloor	1238
2.	Shri Avittom Thirunal Hospital, Ulloor	1063
3.	General Hospital	320
4.	Government Hospital, Peroorkada	100
5.	Shri Ramakrishna Ashrama Charitable Hospital	185
6.	Women & Children Hospital, Thycaud	197
7.	Mental Hospital, Oolampara	56
8.	C.D. Hospital, Iranimuttam	9
9.	City Nursing Home, Convent Road	3
Total		3171

A total of 3171 medical notification forms on cause of death, received from 9 medical institutions during 1976 are analysed here. This is against 3461 deaths reported in the previous year. Deaths reported from Medical College Hospital and Shri Avittam Thirunal hospital taken together come to 73% of mortality cases reported during the year 1976.

### 2.2 *Sex-wise distribution of the leading causes of death*

Table I (1) gives the sex-wise distribution of deaths due to major diseases. Out of 3171 mortality cases reported from various hospitals in the city 1812 (57.1%) were males and 1270 (40.1%) were females. Sex was not reported for 89 (2.8%) cases.

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

This group of diseases accounts for 5.55% of reported deaths during the year under report. The percentages of death among males and females come to 5.63 and 5.75 respectively. This shows that the victims of this group of diseases are comparatively more among females. (Sex was not given in 1 case)

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

This disease claims 3.41% of deaths in 1976. 3.42% of male deaths and 3.62% of female deaths are found to be due to this disease.

#### 3. *Tetanus (A 20):*

This disease accounts for 2.27% of reported deaths. The percentage of female death is slightly higher than that of male deaths; i.e. 2.52% and 2.04% respectively.

4. *Bacterial diseases (A 21):*

Percentage of death due to this disease comes to 2.84. 2.65% of male deaths and 2.83% of female deaths are reported to be due to this disease. [Sex not reported in six cases]

5. *Neoplasms (A 45-61):*

This is responsible for 7.88% of reported deaths during the year. Male victims of this disease are more than female victims; the percentage of deaths being 8.83 and 7.01 respectively.

6. *Anaemias (A 67):*

The percentage of death due to this disease is not very high in the city. Death due to this disease is found to be more among females. (1.73%) than among males (1.21%).

7. *Diabetes mellitus (A 64):*

This disease shares 3.78% of total deaths during the period under report. Male victims are more than female victims

8. *Meningitis (A 72):*

Deaths due to this disease form 3.85% of total deaths. Females are found to be more affected by this disease. The percentages of death among males and females are 2.98 and 4.49 respectively.

9. *Diseases of nervous system and sense organs (A 79):*

The share of this disease to total deaths is 3.31%. Comparatively, deaths due to this disease are more among females.

10. *Heart diseases (A 81-84):*

This group of diseases alone claims 15.58% of total deaths. This is the number one killer in the city. Male victims of this disease are more than female victims.

11. *Cerebrovascular diseases (A 85):*

The percentage of death due to this disease comes to 3.91 of total deaths. Deaths due to cerebrovascular diseases form 3.48% of male deaths and 4.72% of female deaths.

12. *Pneumonia (A 92):*

Pneumonia claims 3.78% of total deaths. The percentage of death among females (4.09)% is higher than that of males (3.53%).

13. *Diseases of digestive system (A 104):*

The percentage of death due to this disease comes to 4.29. Male death outnumber female deaths during the year.

14. *Causes of perinatal morbidity and mortality (A 135):*

Deaths due to this group of causes form 6.62% of total deaths. In this case also male deaths are comparatively more than female deaths.

15. *Symptoms and other ill defined conditions (A 137):*

In this group 2.93% of total deaths have been included.

16. *Accidents (A 138-150):*

Accidents account for 4.73% of deaths. Deaths due to accidents are more among males.

Infectious hepatitis, bronchitis, emphysema and asthma, bacillary dysentery and amoebiasis, cirrhosis of liver and anoxic and hypoxic conditions diseases of genito-urinary system and diphtheria are other causes of death which require to be mentioned separately.

9.55% of deaths are found to be occurred due to various 'other' causes.

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

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 ten age segments from infants to 75 years and above.

0-1 (*infant death*).—Infant deaths form 20.03% of reported deaths during the year 1976. Causes of perinatal morbidity and mortality alone are responsible for 32.28% of infant deaths. The second major cause of infant death is bacterial diseases. This disease claims 8.50% of infant deaths. Meningitis (8.02%) stands third as the major cause of death under this age group. Pneumonia, enteritis and other diarrhoeal diseases and anoxic and hypoxic conditions are other significant causes of infant deaths.

1-4.—13.68% of deaths comes under this age group. Enteritis and other diarrhoeal diseases group tops the list of major causes of death in this age group. This disease alone claims 15.01% of deaths in this age group. Diseases of nervous system, pneumonia, tuberculosis, diphtheria and infectious hepatitis are other leading causes of death under this group.

5-14.—This age group claims 7.63% of total deaths. Heart diseases and infectious hepatitis are the top-most causes of death in this age group. Each of them accounts for 11.16% of deaths occurred under this age group.

Diseases of nervous system, tuberculosis, neoplasms, enteritis and other diarrhoeal diseases and accidents are the other leading causes of death.

15-24.—Deaths in this age group from 6.37% of total deaths reported during the year. Heart disease group with 16.98% of deaths to its credit claims to be the number one killer in this age group. It is followed by accidents (16.03%) Neoplasms, and diseases of digestive system are other leading causes of death found under this age group.

25-34.—Deaths under this age group constitute 6.02% of total deaths. Heart disease is the most significant cause of death in this age group also. The percentage of death due to heart diseases comes to 15.70%. Neoplasms stands as the second leading cause of death. Accidents, diseases of digestive system, meningitis and diabetes mellitus are other notable causes of death seen in this age group.

35-44.—The percentage of death occurred under this age group comes to 6.65. Heart diseases group alone claims 19.90% of deaths. Next to this comes neoplasms with 13.74% of deaths to its credit. Diseases of digestive systems and accidents are other two leading causes of death in this age group.

45-54.—This age group claims 9.43% of total deaths. The prominent cause of death in this age group is heart diseases. This disease group alone is responsible for 25.89% of deaths. Neoplasms which stands second as the major cause of death in this age group claims 6.83% of deaths. Percentages of death due to diseases of digestive system, cerebrovascular diseases, diabetes mellitus and tuberculosis come to 6.47, 5.83, 5.50 and 4.21 respectively.

55-64.—This age group claims 10.53% of reported deaths. Like the previous age groups, the top-most cause of death in this age group also is heart diseases. Deaths due to this set of diseases form 28.74%. This is followed by neoplasms with 12.57% of deaths to its credit. Diabetes mellitus and cerebrovascular diseases are also significant.

65-74.—The percentage of deaths in this age group comes to 7.25. The outstanding cause of death is heart diseases. This disease alone claims 25.65% of deaths. Here also neoplasm is the second major cause of death. This is followed by cerebrovascular diseases and diabetes mellitus. Tuberculosis also requires to be mentioned as a major disease in this age group.

75 and above.—The percentage of death in this age group comes to 2.84. Heart disease group claiming 24.44% of deaths, stands first as the leading cause of death in this age group. Cerebrovascular diseases, infection hepatitis and neoplasms are other major causes of death in this age group.

Age is not specified for 9% of deaths reported during the year.

## 2.4 Religion-wise distribution of leading causes of death

Religion-wise analysis of death due to leading causes is given in table I (3).

Hinduism, Christianity and Islam are the three major religions in this Corporation. Out of 3171 cases processed in this report, 67.7% were Hindus, 12.1% Christians and 10.4% Muslims. Others had not reported their religion. Such cases are tabulated under the column NR. Heart diseases group tops the list of leading causes of death among Hindus. The percentage of death due to this disease falls to 16.82. Other significant causes of death among Hindus are neoplasms, causes of perinatal morbidity and mortality and enteritis and other diarrhoeal diseases. Accidents account for 5.68% of deaths.

The most significant cause of death among Christians also is heart diseases. The percentage of death due to this comes to 15.40. Other major causes of death seen among Christians are neoplasms, causes of perinatal morbidity and mortality, enteritis and other diarrhoeal diseases and diabetes mellitus.

As in the case of other two religions, among Muslims also heart disease group occupies first place as the major killer. This disease group alone claims 16.67% of deaths among this religion. Neoplasms is the second major disease (10.61%). Cerebrovascular diseases, diseases of digestive system, causes of perinatal morbidity and mortality and enteritis and other diarrhoeal disease are the other notable diseases among Muslims.

Among all the three religions the top-most cause of death is heart diseases. However, comparatively it is higher among Hindus. Similarly, neoplasms is the second major cause of death among all the three religion. Comparatively, the incidence of death due to this disease is higher among Christians. Deaths due to enteritis and other diarrhoeal diseases, diabetes mellitus and tetanus are also comparatively more among Christians. At the same time percentages of death due to Pneumonia and infectious hepatitis are the lowest among them. The percentage of death due to cerebrovascular diseases is higher among Muslims, so also with meningitis.

## 2.5 Causes of domiciliary deaths

Table I (4) gives the classification of causes of domiciliary deaths collected on a sample basis through symptomatic method.

206 domiciliary deaths were collected from Trivandrum city. Out of this 90 deaths were to Hindus, 85 to Christians and 31 to Muslims.

Heart diseases can be seen as the prominent cause of domiciliary deaths among Hindus. 17, out of 90 deaths are due to this set of diseases alone. Other major causes of domiciliary deaths are senility and asthma.

Among Christians, 16 out of 85 deaths are due to senility alone. Paralysis of cerebral apoplexy, tuberculosis of lungs and heart diseases are other important causes of domiciliary deaths among them.

Senility is the main cause of domiciliary deaths among Muslims also. Out of 31 deaths, 14 are due to this cause alone. Heart diseases and tuberculosis of lungs are other notable causes.

## 2.6 Summary of findings

Analysis of medically certified deaths in Trivandrum Corporation during 1976 reveals the following facts:

1. Most significant cause of death during the year is noted to be heart diseases. This set of disease is the number-one killer in all age groups except the first two. Infectious hepatitis take a heavy toll of life in the age group 5-14.

2. Neoplasms, causes of perinatal morbidity and mortality, enteritis and other diarrhoeal diseases, diseases of digestive system, cerebrovascular diseases, meningitis, diabetes mellitus and pneumonia are found to be some of the other leading causes of death reported.

3. About 1/3 of infant deaths are due to causes of perinatal morbidity and mortality.

4. When compared to other age groups, percentage of death due to enteritis and other diarrhoeal diseases is very high among children of 1-4.

5. 34% deaths due to accidents occurred in the age group-15-34.

6. Mortality due to heart diseases, neoplasms, diabetes, diseases of digestive system, symptoms and other ill defined conditions and accidents can be seen more among males. Similarly causes of perinatal morbidity and mortality take the highest toll of life from among the male infants.

7. Female victims of diseases like enteritis, tuberculosis, tetanus, anaemias, meningitis, cerebrovascular diseases, pneumonia, bronchitis and asthma are comparatively more than male victims.

8. On comparison with other two religions percentage of death due to diabetes is noted to be higher among Christians during the year 1976. Same is the case with neoplasms.

9. During 1976 mortality due to accidents is the lowest among Muslims.

10. When compared to the previous two years, percentage of death due to tuberculosis is found to be on the decline during 1976.



## 2.7 Recommendations

1. Heart diseases group takes the highest toll of life in the city during the year 1976. This group claimed first rank as the major killer in the previous two years also. The reasons for such a high percentage of death due to this group of diseases has to be investigated first. Further services of more heart specialists must be made available.

2. High percentage of death due to causes of perinatal morbidity and mortality requires launching of a comprehensive policy covering maternity and child care, health and nutrition. It is desirable to design and start more programmes for the protection and promotion of health of mothers and children in the weaker sections of the community.

3. When compared to other cities mortality due to heart diseases and infectious hepatitis among children below 15 is noted to be very high in this city. This is a matter of grave concern and needs thorough study and investigations.

4. According to researchers, overcrowding in both living and travel will create tension which may lead to heart attacks and nervous breakdowns. Therefore possible steps have to be taken to provide more facilities in these two respects so as to avoid tension.

TABLE 1 (1)

Statement showing the leading cause of death occurred in various hospitals in Trivandrum Corporation according to sex during the year 1976

Code No.	Cause of death	Male	Female	N. R.	Total
(1)	(2)	(3)	(4)	(5)	(6)
A2	Typhoid fever	14 (0.77)	12 (0.94)	..	26 (0.82)
A4	Bacillary dysentery and amoebiasis	42 (2.32)	12 (0.94)	1 (1.12)	55 (1.73)
A5	Enteritis and other diarrhoeal diseases	102 (5.63)	73 (5.75)	1 (1.12)	176 (5.55)
A6-10	Tuberculosis	62 (3.42)	46 (3.62)	..	108 (3.41)
A14	Leprosy	1 (0.05)	..	..	1 (0.03)
A15	Diphtheria	18 (0.99)	18 (1.42)	2 (2.24)	38 (1.20)
A20	Tetanus	37 (2.04)	32 (2.52)	2 (2.24)	71 (2.27)
A21	Other bacterial diseases	48 (2.65)	36 (2.83)	6 (6.72)	90 (2.84)

(1)	(2)	(3)	(4)	(5)	(6)
A28	Infectious hepatitis	48 (2.65)	25 (1.97)	..	73 (2.30)
A45-61	Neoplasms	160 (8.83)	89 (7.01)	1 (1.12)	250 (7.88)
A64	Diabetes mellitus	76 (4.19)	44 (3.46)	..	120 (3.78)
A65	Avitaminoses and other nutritional deficiency	22 (1.21)	9 (0.72)	1 (1.12)	32 (1.01)
A67	Anaemias	20 (1.10)	22 (1.73)	..	42 (1.32)
A72	Meningitis	54 (2.98)	57 (4.49)	11 (12.32)	122 (3.85)
A79	Other diseases of nervous system and sense organs	51 (2.81)	46 (3.62)	8 (8.96)	105 (3.31)
A81-84	Heart disease	302 (16.67)	184 (14.49)	8 (8.96)	494 (15.58)
A85	Cerebrovascular disease	63 (3.48)	60 (4.72)	1 (1.12)	124 (3.91)
A92	Other Pneumonia	64 (3.53)	52 (4.09)	4 (4.48)	120 (3.78)
A93	Bronchitis, emphysema and asthma	32 (1.77)	28 (2.80)	3 (3.36)	63 (1.99)
A96	Other diseases of respiratory system	21 (1.16)	12 (0.94)	..	33 (1.04)
A102	Cirrhosis of liver	39 (2.15)	14 (1.10)	..	53 (1.67)
A104	Other diseases of digestive system	82 (4.53)	53 (4.17)	1 (1.12)	136 (4.29)
A111	Other diseases of genito-urinary system	25 (1.38)	15 (1.18)	..	40 (1.26)
A134	Anoxic and hypoxic conditions not elsewhere classified	21 (1.16)	19 (1.50)	4 (4.48)	44 (1.39)
A135	Other causes of perinatal morbidity and mortality	114 (6.29)	78 (6.14)	18 (22.22)	210 (6.62)
A137	Symptoms and other defined conditions	59 (3.26)	34 (2.68)	..	93 (2.93)
A138-150	Accidents	93 (5.13)	56 (4.41)	1 (1.12)	150 (4.73)
	Others	142 (7.84)	144 (11.34)	16 (17.86)	302 (9.55)
	Total	1812 (100.00)	1270 (100.00)	89 (100.00)	3171 (100.00)

(Figures in brackets indicate percentage)

TABLE 1 (2)

Statement showing the leading cause of death occurred in various institutions in Trivandrum Corporation according to age group-wise and sex-wise distribution during the year 1976

Code No.	Cause of death	Less than 1-4											
		T	M	F	NR	T	M	F	NR	T	M	F	NR
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
A2	Typhoid fever	1 (0.16)	1	..	..	3 (0.69)	2	1	..	..	..	..	..
A4	Bacillary dysentery and amoebiasis	2 (0.32)	2	..	..	13 (3.00)	5	7	1	..	..	..	..
A5	Enteritis and other diarrhoeal diseases	46 (7.24)	25	20	1	65 (15.01)	34	31	..	..	..	..	..
A6-10	Tuberculosis	1 (0.16)	..	1	..	24 (5.54)	12	12	..	..	..	..	..
A15	Diphtheria	7 (1.10)	4	3	..	24 (5.54)	11	12	1	..	..	..	..
A20	Tetanus	21 (3.31)	7	12	2	5 (1.15)	2	3	..	..	..	..	..
A21	Other bacterial diseases	54 (8.50)	28	20	6	16 (3.70)	7	9	..	..	..	..	..
A28	Infectious hepatitis	2 (0.30)	1	1	..	19 (4.39)	11	8	..	..	..	..	..
A45-61	Neoplasms	4 (0.63)	3	1	..	12 (2.77)	9	3	..	..	..	..	..
A64	Diabetes mellitus	..	..	..	..	..	..	..	..	..	..	..	..
A65	Avitaminoses and other nutritional deficiency	10 (1.57)	6	4	..	13 (3.00)	9	3	1	..	..	..	..
A67	Anaemias	..	..	..	..	4 (0.92)	2	2	..	..	..	..	..
A72	Meningitis	51 (8.03)	23	20	8	18 (4.16)	5	11	2	..	..	..	..

A79	Other diseases of nervous system & sense organs	9 (1.42)	4	5	..	46 (10.62)	20	22	4
A81-84	Heart diseases	18 (2.83)	5	7	6	18 (4.16)	10	7	1
A85	Cerebrovascular disease	9 (1.42)	6	2	1	..	..	..	..
A92	Other Pneumonia	47 (7.40)	26	18	3	36 (8.32)	17	18	1
A93	Bronchitis, emphysema and asthma	10 (1.57)	4	3	3	12 (2.77)	4	8	..
A96	Other diseases of respiratory system	1 (0.16)	1	..	..	1 (0.23)	1	..	..
A102	Cirrhosis of liver	1 (0.16)	1	..	..	3 (0.69)	2	1	..
A104	Other diseases of digestive system	8 (1.26)	5	3	..	16 (3.71)	9	6	1
A111	Other diseases of genitourinary system	..	..	..	..	..	..	..	..
A134	Anoxic & hypoxic conditions not elsewhere classified	41 (6.46)	21	16	4	..	..	..	..
A135	Other causes of perinatal morbidity & mortality	205 (32.25)	112	78	15	..	..	..	..
A137	Symptoms & other illdefined conditions	17 (2.66)	13	4	..	7 (1.62)	4	3	..
A138-150	Accidents	2 (0.31)	1	1	..	9 (2.08)	4	5	..
	Others	68 (10.70)	27	30	11	69 (14.93)	31	34	4
	Total	635 (100.00)	326	249	60	433 (100.00)	211	206	16

(Figures in brackets show percentage)

TABLE 1 (2)—Contd.

Code No.	Cause of death	5-14			15-24				
		T	M	F	NR	T	M	F	NR
(1)	(2)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
A2	Typhoid fever	4 (1.65)	2	2	..	5 (2.36)	1	4	..
A4	Bacillary dysentery and amoebiasis	10 (4.13)	7	3	..	..	..	..	..
A5	Enteritis and other diarrhoeal diseases	16 (6.61)	9	7	..	5 (2.36)	3	2	..
A6-10	Tuberculosis	19 (7.85)	11	8	..	9 (4.25)	2	7	..
A15	Diphtheria	5 (2.07)	2	3	..	..	..	..	..
A20	Tetanus	6 (2.48)	4	2	..	9 (4.25)	6	3	..
A21	Other bacterial diseases	6 (2.48)	5	1	..	3 (1.52)	2	1	..
A28	Infectious hepatitis	27 (11.16)	16	11	..	6 (2.83)	4	2	..
A45-61	Neoplasms	19 (7.85)	12	7	..	18 (8.49)	7	11	..
A64	Diabetes mellitus	..	..	..	..	4 (1.89)	3	1	..
A65	Avitaminoses and other nutritional deficiency	1 (0.41)	1	..	..	..	..	..	..
A67	Anaemias	1 (0.41)	..	1	..	4 (1.89)	1	3	..
A72	Meningitis	8 (3.30)	1	6	1	7 (3.30)	3	4	1

A79	Other diseases of nervous system & sense organs	21 (8.68)	8	3	8 (3.77)	4	4	..
A81-84	Heart diseases	27 (11.16)	13	..	36 (16.98)	13	23	..
A85	Cerebrovascular disease	3 (1.24)	..	..	1 (0.47)	..	1	..
A92	Other Pneumonia	11 (4.55)	7	..	1 (0.47)	1	..	..
A93	Bronchitis, emphysema and asthma	..	..	..	2 (0.94)	..	2	..
A96	Other diseases of respiratory system	3 (1.24)	2	..	..	..	..	..
A102	Cirrhosis of liver	2 (0.83)	2	..	2 (0.94)	2	..	..
A104	Other diseases of digestive system	12 (4.95)	5	..	16 (7.54)	6	10	..
A111	Other diseases of genitourinary system	6 (2.48)	5	..	6 (2.83)	1	5	..
A134	Anoxic & hypoxic conditions not elsewhere classified	..	..	..	..	..	..	..
A135	Other causes of perinatal morbidity & mortality	..	..	..	..	..	..	..
A137	Symptoms & other ill-defined conditions	7 (2.89)	5	..	9 (4.24)	4	5	..
A138-150	Accidents	16 (6.61)	7	..	34 (16.03)	20	14	..
	Others	12 (4.96)	4	..	27 (12.73)	7	20	..
	Total	242 (100.00)	129	109	212 (100.00)	90	122	..

(Figures in brackets show percentage)

TABLE 1 (2)—Contd.

Code No.	25-34					35-44				
	T (19)	M (20)	F (21)	NR (22)	T (23)	M (24)	F (25)	NE (26)		
(1)										
A2	3 (1.57)	1	2	..	2 (0.94)	1	1	..		
A4	..	..	..	..	5 (2.36)	5	..	..		
A5	2 (1.04)	..	2	..	7 (3.31)	7	..	..		
AG-10	3 (1.57)	2	1	..	7 (3.31)	7	..	..		
A15	..	..	..	..	..	..	..	..		
A20	8 (4.18)	4	4	..	6 (2.84)	5	1	..		
A21	1 (0.52)	1	..	..	1 (0.47)	..	1	..		
A28	3 (1.57)	2	1	..	9 (4.26)	9	..	..		
A45-61	21 (10.99)	13	8	..	29 (13.74)	16	13	..		
A64	10 (5.23)	7	3	..	7 (3.31)	5	2	..		
A65	..	..	..	..	2 (0.94)	2	..	..		
A67	6 (3.14)	2	4	..	3 (1.42)	3	..	..		
A72	11 (5.75)	6	5	..	4 (1.89)	3	1	..		

A79	2	1	..	3	2	1	..
	(1.04)			(1.42)			
A81-84	30	15	..	42	29	13	..
	(15.70)			(19.90)			
A85	9	5	..	4	4	..	..
	(4.71)			(1.89)			
A92	3	1	..	4	3	1	..
	(1.57)			(1.89)			
A93	..	..	..	1	..	1	..
				(0.47)			
A96	4	2	..	7	3	4	..
	(2.09)			(3.31)			
A102	6	3	..	11	7	4	..
	(3.14)			(5.21)			
A104	12	7	..	16	10	6	..
	(6.28)			(7.58)			
A111	7	3	..	3	2	1	..
	(3.66)			(1.42)			
A134	1	..	..	..	..	..	..
	(0.52)						
A135	..	..	..	..	..	..	..
A137	9	4	..	7	4	3	..
	(4.71)			(3.31)			
A138-150	17	3	..	15	6	9	..
	(8.90)			(17.11)			
Others	23	4	..	16	11	5	..
	(12.12)			(7.58)			
Total	191	76	..	211	144	67	..
	(100.00)			(100.00)			



TABLE I (2)—Contd.

Code No.	45-54				55-64			
	T (27)	M (28)	F (29)	NR (30)	T (31)	M (32)	F (33)	NR (34)
A2	4 (1.29)	3	1	..	1 (0.29)	1	..	..
A4	6 (1.94)	5	1	..	8 (2.39)	8	..	..
A5	7 (2.27)	6	1	..	6 (1.79)	4	2	..
A6-10	13 (4.21)	10	3	..	8 (2.39)	3	5	..
A15	..	..	..	..	..	..	..	..
A20	5 (1.62)	4	1	..	3 (0.89)	2	1	..
A21	..	..	..	..	1 (0.29)	..	1	..
A28	3 (0.97)	1	2	..	4 (1.19)	3	1	..
A45-61	52 (16.83)	35	17	..	42 (12.57)	26	16	..
A64	17 (5.50)	10	7	..	35 (10.47)	25	10	..
A65	3 (0.97)	2	1	..	1 (1.29)	1	..	..
A67	4 (1.29)	1	3	..	10 (2.90)	7	3	..
A72	6 (1.94)	5	1	..	7 (2.09)	2	5	..

A79	2	..	..	5	2	..
	(0.65)	..	..	(1.49)		
A81-84	80	23	..	96	26	..
	(25.89)			(28.74)		
A85	18	12	..	23	12	..
	(5.83)			(6.98)		
A92	2	..	..	7	3	..
	(0.65)			(2.09)		
A93	10	3	..	12	6	..
	(3.24)			(3.59)		
A96	3	..	..	7	3	..
	(0.97)			(2.09)		
A102	9	..	..	10	4	..
	(2.91)			(2.90)		
A104	20	6	..	10	2	..
	(6.47)			(2.90)		
A111	7	2	..	4	1	..
	(2.27)			(1.19)		
A134	..	..	..	..	..	..
A135	..	..	..	..	..	..
A137	7	3	..	9	2	..
	(2.27)			(2.69)		
A138-150	15	8	..	3	..	..
	(4.85)			(0.89)		
Others	* 16	3	..	22	5	..
	(5.18)			(6.58)		
Total	309	98	..	334	110	..
	(100.00)			(100.00)		



A79	4 (1.74)	2	..	..	..	..	..
A81-84	59 (25.65)	39	20	--	22 (24.44)	14	8
A85	25 (10.87)	9	16	--	12 (13.33)	8	4
A92	4 (1.71)	3	1	..	1 (1.11)	..	1
A93	8 (3.48)	5	3	..	1 (1.11)	1	..
A96	3 (1.30)	2	1	..	1 (1.11)	1	..
A102	2 (0.87)	2	..	..	1 (1.11)	1	..
A104	5 (2.17)	4	1	..	2 (2.22)	2	..
A111	8 (3.48)	6	2	..	..	..	..
A134	..	..	..	..	..	..	..
A135	..	..	..	..	..	..	..
A137	6 (2.61)	6	..	..	9 (10.00)	6	3
A138-150	8 (3.48)	6	2	..	4 (4.49)	2	2
Others	16 (6.96)	10	6	..	11 (12.22)	7	4
Total	230 (100.00)	155	75	..	90 (100.00)	58	32

TABLE 1(2)—Contd.

Code No.	All age group				Age NR				Total			
	T	M	F	NR	T	M	F	NR	T	M	F	NR
(1)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)	(52)	(53)	(54)
A2	23 (0.80)	11	12	..	3 (1.06)	3	..	..	26 (0.82)	14	12	..
A4	48 (1.66)	36	12	..	6 (2.11)	6	..	..	55 (1.73)	42	12	1
A5	166 (5.75)	97	68	1	10 (3.52)	5	5	..	176 (5.55)	102	73	1
A6-10	98 (3.39)	58	40	..	10 (3.52)	4	6	..	108 (3.41)	62	46	..
A15	36 (1.25)	17	18	1	2 (0.70)	1	..	1	38 (1.20)	18	18	2
A20	68 (2.36)	36	30	2	3 (1.06)	1	2	..	71 (2.27)	37	32	2
A21	84 (2.91)	44	34	6	6 (2.11)	4	2	..	90 (2.84)	48	36	6
A28	71 (7.46)	46	25	..	2 (0.70)	2	..	..	73 (2.30)	68	25	..
A45-61	220 (7.62)	151	69	..	19 (6.69)	9	9	1	250 (7.88)	160	89	1
A64	99 (3.43)	65	34	..	21 (7.39)	11	10	..	120 (3.78)	76	44	..
A65	29 (1.00)	21	8	..	2 (0.70)	1	1	..	32 (1.01)	22	9	1
A67	39 (1.35)	20	19	..	3 (1.06)	..	3	..	42 (1.32)	20	22	..
A72	113 (3.91)	49	53	11	9 (3.17)	5	4	..	122 (3.84)	54	57	11

A79	100 (3.46)	48	25	5	3	1	1	105 (3.31)	51	46	8
A81-84	428 (14.83)	265	156	7	37	28	1	494 (15.58)	302	184	8
A85	106 (3.67)	53	52	1	10	8	..	124 (3.91)	63	60	1
A92	111 (3.84)	62	49	..	2	3	..	120 (3.78)	64	52	4
A93	56 (1.94)	27	26	3	5	2	..	63 (1.99)	32	28	3
A96	30 (1.04)	18	12	..	3	..	..	33 (1.04)	21	12	..
A102	47 (1.63)	33	14	..	6	..	..	53 (1.67)	39	14	..
A104	117 (4.05)	70	46	1	12	7	..	136 (4.29)	82	53	1
A111	36 (1.25)	21	15	..	4	..	..	40 (1.26)	25	15	..
A134	42 (1.45)	21	17	4	..	2	..	44 (1.39)	21	19	4
A135	205 (7.10)	112	78	15	2	..	3	210 (6.62)	144	78	18
A137	87 (3.01)	55	32	..	4	2	..	93 (2.93)	59	34	..
A138-150	123 (4.26)	74	49	..	11	7	1	150 (4.73)	93	56	1
Others	305 (10.53)	135	149	21	17	5	1	302 (9.52)	102	144	16
Total	2887 (100.00)	1644	1163	80	284 (100.00)	107	9	3171 (100.00)	1812	1270	89

Figures in brackets show percentage.

TABLE I (3)

Statement showing the leading cause of death occurred in various medical institutions in Trivandrum Corporation according to Religion during the year 1976

<i>Code No.</i>	<i>Cause of death</i>	<i>Hindu</i>	<i>Christian</i>	<i>Muslim</i>	<i>N.A.</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A2	Typhoid fever	17 (0.79)	4 (1.04)	3 (0.91)	2 (0.64)	26 (0.82)
A4	Bacillary dysentery and amoebiasis	38 (1.77)	4 (1.04)	2 (0.61)	11 (3.53)	55 (1.73)
A5	Enteritis & other diarrhoeal diseases	109 (5.08)	24 (6.27)	17 (5.15)	26 (8.33)	176 (5.55)
A6-10	Tuberculosis	77 (3.59)	14 (3.66)	8 (2.42)	9 (2.88)	108 (3.41)
A15	Diphtheria	15 (0.70)	5 (1.31)	5 (1.51)	13 (4.17)	38 (1.20)
A20	Tetanus	44 (2.05)	12 (3.13)	8 (2.42)	7 (2.24)	71 (2.27)
A21	Other bacterial diseases	55 (2.56)	9 (2.35)	10 (3.03)	16 (5.13)	90 (2.84)
A28	Infectious hepatitis	51 (2.38)	6 (1.57)	10 (3.03)	6 (1.42)	73 (2.30)
A45-61	Neoplasms	166 (7.73)	46 (12.01)	35 (10.61)	3 (0.96)	250 (7.88)
A64	Diabetes mellitus	83 (3.87)	24 (6.27)	13 (3.93)	.. ..	120 (3.78)
A65	Avitaminoses and other nutritional deficiency	19 (0.89)	1 (0.26)	3 (0.91)	9 (2.88)	32 (1.01)
A67	Anaemias	34 (1.58)	4 (1.04)	3 (0.91)	1 (0.32)	42 (1.32)
A72	Meningitis	73 (2.87)	13 (3.39)	12 (3.64)	24 (7.69)	122 (3.84)
A79	Other diseases of nervous system	66 (3.08)	10 (2.61)	12 (3.64)	17 (5.45)	105 (3.31)
A81-84	Heart diseases	361 (16.82)	59 (15.40)	55 (16.67)	19 (6.09)	494 (15.58)
A85	Cerebrovascular diseases	86 (4.01)	15 (3.92)	22 (6.67)	1 (0.32)	124 (3.91)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
A92	Other Pneumonia	80 (3.73)	10 (2.61)	13 (3.94)	17 (5.45)	120 (3.78)
A93	Bronchitis emphysema and Asthma	44 (2.05)	6 (1.57)	5 (1.21)	9 (2.88)	63 (1.99)
A96	Other diseases of respiratory system	25 (1.16)	4 (1.04)	4 (1.21)	.. ..	33 (1.04)
A102	Cirrhosis of liver	38 (1.77)	10 (2.60)	4 (1.21)	1 (0.32)	53 (1.67)
A104	Other diseases of digestive system	89 (4.15)	22 (5.74)	19 (5.76)	6 (1.92)	136 (4.29)
A111	Other diseases of genito- urinary system	28 (1.30)	7 (1.83)	4 (1.21)	1 (.0.32)	40 (1.20)
A134	Anoxic and hypoxic condi- tions not elsewhere classified	29 (1.35)	4 (1.04)	3 (0.91)	8 (2.56)	44 (1.39)
A135	Other causes of perinatal morbidity and mortality	116 (5.41)	27 (7.05)	18 (5.45)	49 (15.71)	210 (6.62)
A137	Symptoms and other ill defined conditions	67 (3.12)	12 (3.13)	10 (3.03)	4 (1.28)	93 (2.93)
A138-150	Accidents	122 (5.68)	13 (3.39)	7 (2.12)	8 (2.56)	150 (4.73)
	Others	214 (9.97)	18 (4.73)	26 (7.89)	45 (14.43)	303 (9.55)
	Total	2146 (100.00)	383 (100.00)	330 (100.00)	312 (100.00)	3171 (100.00)

(Figures in brackets give percentage.)



TABLE 1 (4)  
Coverage 1976

Code No.	Cause of death	Sex	Trivandrum			
			H	X	M	T
1.	Drowning	M	..	4	..	..
		F	..	1	..	5
2.	Falls	M	..	..	..	..
		F	1	..	..	1
3.	Vehicular accidents	M	..	1	..	1
		F	..	..	..	..
4.	Influenza	M	1	..	..	..
		F	1	..	..	..
5.	Typhoid	M	..	..	..	..
		F	..	1	..	1
6.	Gastro enteritis	M	2	3	..	..
		F	..	1	..	6
7.	Tuberculosis of lungs	M	3	8	2	..
		F	2	3	1	19
8.	Asthma	M	10	2	2	..
		F	2	5	..	21
9.	Pneumonia	M	3	..	..	..
		F	1	2	..	6
10.	Bronchitis	M	2	..	..	..
		F	1	..	..	3
11.	Paralysis of cerebrale apopxy	M	1	10	..	..
		F	3	3	..	17
12.	Anaemia	M	..	..	..	..
		F	..	1	..	1
13.	Congenital heart disease	M	5	4	1	..
		F	1	4	..	15
14.	Heart attack (eschaemic heart disease)	M	12	6	8	..
		F	5	4	2	37
15.	Cirrhosis of liver	M	4	..	..	..
		F	1	..	..	5
16.	Jaundice	M	4	1	..	..
		F	..	..	..	5
17.	Mental disease	M	..	..	..	..
		F	1	1	..	2
18.	Cancer	M	4	1	..	..
		F	1	1	1	8
19.	Diabetis	M	3	1	..	5
		F	1	..	..	..
20.	Hyper plasia of prostate	M	2	1	..	..
		F	..	1	..	4
21.	Senility	M	8	8	8	..
		F	5	8	6	43
Total		M	64	50	21	135
		F	26	35	10	71

3.1 *Report on Medical Certification of cause of death in Cochin Corporation for the year 1976.*

*Medical institutions included in the scheme:*

There is a net work of various government and private treatment centres in Cochin Corporation 33 medical institutions are included under the scheme of medical certification of cause of death. Out of this, medical notification forms were received from 25 medical institutions during the year 1976. No death has been reported from the remaining 8 institutions.

**Name of medical institutions with number of cases covered**

<i>Sl. No.</i>	<i>Name</i>	<i>Number of cases covered</i>
1	General Hospital, Ernakulam	625
2	Government Hospital, Palluruthy	179
3	General Hospital, Fort Cochin	154
4	Corporation Hospital, Ernakulam	43
5	Women & Children Hospital, Mattancherry	50
6	District T.B. Centre, Palluruthy	32
7	E.S.I. Hospital, Ernakulam	17
8	Port Trust Hospital, Cochin	27
9	Medical Trust Hospital	136
10	Susrusha Nursing Home, Ernakulam	3
11	Gautham Hospital, Cochin	25
12	I.N.H.S. Sanjivani, Cochin	15
13	Dr. Kunhalu's Nursing Home	6
14	Dr. K. B. Jacob's Nursing Home, Cochin	10
15	Sree Sudheendra Medical Mission Hospital	38
16	M.A.J. Hospital, Edappally	24
17	Lourdes Hospital, Ernakulam	185
18	Lisie Hospital, Ernakulam	49
19	Homoco Hospital, Ernakulam	1
20	Ojus Clinic	10
21	St. John Hospital, Cochin	4
22	Rama Bai Bhut Nursing Home, Cochin	7
23	Krishna Nursing Home, Cochin	5
24	N.S.S. Medical Mission Hospital, Ernakulam	5
25	City Hospital, Ernakulam	37

Out of the 1683 medically certified deaths, 65.3% was reported from Government medical institutions. General Hospital, Ernakulam alone reported 625 deaths.

### 3.2 Sex-wise distribution of death due to leading causes

Distribution of death due to leading causes is given in Table II (1).

(1) *Enteritis and other diarrhoeal diseases*: This set of diseases accounts for 1.26% of total deaths. Female deaths due to enteritis out number male deaths.

(2) *Tuberculosis*: This disease is responsible for 9.63% of deaths. The percentage of death due to tuberculosis is higher for males. 11.11% of male and 7.14% of female deaths are due to this disease during the year.

(3) *Tetanus*: This disease is responsible for 2.79% of total deaths reported during the year. Female deaths due to this disease out number male deaths.

(4) *Neoplasm*: This disease accounts for 8.26% of deaths during the period under report. The incidence of this disease falls more or less the same way on both sexes.

(5) *Diabetes mellitus*: Percentage of death due to this disease comes to 2.38. Male deaths show a higher percentage than female deaths. Though the probability of child death due to diabetes is rare, one death was reported to have occurred due to this disease among males of age group 1-4.

(6) *Anaemias*: This disease is responsible for 2.73% of total deaths. Female deaths due to this disease are found to be more than male deaths.

(7) *Meningitis*: When compared to other leading causes, percentage of death due to meningitis is not very high. It comes to only 1.13% of total deaths. Comparatively death due to this disease is more among females.

(8) *Diseases of nervous system*: 3.38% of deaths are reported to have occurred due to this set of diseases. The percentage of female death is slightly higher than that of male deaths.

(9) *Heart diseases*: This group of diseases which claims 17.26% of deaths is the outstanding cause of death during the year 1976. Among both the sexes, this is the top-most cause of death. However, the percentage of death among males is higher than that of females.

(10) *Cerebrovascular diseases*: Cerebrovascular diseases are responsible for 5.35% of reported deaths during the year. 4.94% of male deaths and 6.03% of female deaths are seen to have occurred due to this disease.

(11) *Pneumonia*: Pneumonia accounts for 5.35% of deaths. The percentages of male and female deaths come to 5.03 and 5.87 respectively.

(12) *Diseases of digestive system*: Deaths due to this disease come to 3.68% of total deaths. 3.61% of male deaths and 3.80% of female deaths are found to be due to this disease.

(13) *Causes of perinatal morbidity and mortality*: This group claims 3.56% of total deaths. Percentage of female infant death is found to be slightly above that of males.

(14) *Symptoms and other ill-defined conditions*: Percentage of deaths reported under this category is not very high. It comes to only 0.65%.

(15) *Accidents*: Accidents account for 7.60% of deaths. On comparison, male deaths are seen to be more than that of females.

Bronchitis, intestinal obstruction and hernia and anoxic and hypoxic conditions are other major causes of death reported from Cochin Corporation. 19.07% of deaths are seen to have occurred due to various other causes.

3.3 *Age-wise distribution of death due to leading causes*: (Table II (2) gives the age-wise distribution of cause of death 0-1 (*infant death*))

Share of this age-group to total deaths comes to 14%. The outstanding cause of infant death is that of perinatal morbidity and mortality. One fourth of the infant deaths during 1976 is due to this cause alone. This is followed by pneumonia with 15% of infant deaths to its credit. Anoxic and hypoxic conditions (10.83%) and tetanus are other leading causes of death under this age-group.

1-4: Deaths in this age-group form 10.4% of total deaths reported during 1976. The most significant cause of death in this age-group is pneumonia. It claims 17.61% of infant deaths. Diseases of nervous system and diseases of digestive system occupy second and third place as the major killers of children under this age-group. Other diseases which deserve to be mentioned are tuberculosis, enteritis, and other diarrhoeal diseases and bronchitis. Further, diabetes mellitus is also found as a cause of death in this age-group.

5-14: This age group claims 7.36% of total deaths. Diseases of nervous system and accidents with 12.90% and 11.29% of deaths respectively are the outstanding causes of death in this age group. Neoplasm, diseases of digestive system, heart diseases, meningitis and pneumonia are also notable causes.

15-24: Percentage of death in this age group comes to 6.54. Accidents are responsible for 31.82% of deaths. Heart diseases and tuberculosis take

second and third place as the leading causes of death in this age-group. Diseases of nervous system and neoplasms are also found to be significant.

25-34: Deaths in this age-group forms 5.4% of total reported deaths during the year 1976. As in the case of the previous age-group, accidents are the number one cause of death in this age-group also. (17.39% of deaths) Tuberculosis stands second with 14.13% of deaths to its credit. Heart diseases and neoplasms are other leading causes of death in this age-group.

35-44: Deaths in this age-group constitute 9.2% of total deaths. The most outstanding cause of death in this age-group is heart diseases. This group alone is responsible for 24.39% deaths. Neoplasms and tuberculosis each claiming 13.41% of deaths share the second place as the leading causes of death.

45-54: This age-group claims 15.3% of total deaths. Heart disease which account for 23.94% of deaths are the most significant cause of death in this age-group also. Tuberculosis, Neoplasms and Cerebrovascular diseases are other major leading causes of deaths found in this age-group.

55-64: This age-group contributes 14.2% of total deaths. As in the case of the previous two age-groups, heart disease group claims first rank as the major cause of death in this age-group also. Percentage of death comes to 26.78. Tuberculosis (13.29%), neoplasms (10.88%) and cerebrovascular diseases (10.88%) are also found to be prominent in this age group.

65-74: 11.4% of deaths are found to have occurred in the age-group. Heart diseases group continues to be the leading cause of death in this age-group also. Neoplasms, tuberculosis and cerebrovascular diseases are also found to be notable.

75 and above: Percentage of death in this age-group comes to 5.0. Heart diseases group tops the list of major causes of death. Percentage of death due to heart diseases comes as high as 32.22. Other significant causes are cerebrovascular diseases and neoplasms.

### 3.4 Religion-wise distribution of leading causes of death

Religion-wise distribution of leading causes of death is given in Table II (3).

Out of the 1683 death cases processed in this report, the percentages of death to Hindus, Christians and Muslims are 48.43, 37.39 and 14.18 respectively.

The first major cause of death in all the three religions is heart diseases. Deaths due to this cause among Hindus, Christians and Muslims come to 16.07%, 18.68% and 17.20% respectively. Neoplasms is the second major cause

of death among Hindus. Among Christians and Muslims, it is the tuberculosis which stands second as the major cause of death. Neoplasms which has caused 8.96% and 8.86% of deaths among Hindus and Christians respectively has lead to only 4.45% of deaths among Muslims. Next to heart diseases and neoplasms, tuberculosis, pneumonia, cerebrovascular diseases and anaemias come as the leading causes of death among Hindus. When compared to other two religions, the percentage of death due to accidents also is high among Hindus.

The percentage of death due to tetanus is the highest among Muslims, so also with enteritis, meningitis and bronchities. At the same time percentages of death due to anaemias, diabetes-mellitus, cerebrovascular diseases, causes of perinatal morbidity and mortality and accidents are found to be the lowest among Muslims.

### 3.5 Domicilliary deaths

Table II (4) gives the distribution of domicilliary deaths due to leading causes.

To extend the coverage of this study 10% of deaths occurred in each ward during the year 1976 were collected. These deaths come to 107 in total. Out of this, 51 deaths are among Hindus, 34 among Christians and 22 among Muslims. Senility is seen as the first major cause of domicilliary deaths among Hindus and Christians. Various other symptoms, tuberculosis, heart diseases and cancer are other causes reported for domicilliary deaths among Hindus. Next to senility, tuberculosis, heart attack and pneumonia and paralysis of cerebral apoplexy stand as the major causes of domicilliary deaths among Christians. Tuberculosis, Asthma, senility, etc., are the prominent causes of deaths among Muslims.

### 3.6 Summary of findings

1. The prominent killers among infectious diseases reported during the year were tuberculosis, tetanus and enteritis and other diarrhoeal diseases.
2. The outstanding causes of infant deaths are cause of perinatal morbidity and mortality and anoxic and hypoxic conditions. Mortality due to anoxic and hypoxic conditions, peculiar to early infancy is very high in this city.
3. Pneumonia and diseases of nervous system are found to be the most significant causes of death among children of age-groups 1-4 and 5-14 respectively.
4. Accidents occupy first place as the major cause of deaths in the age-groups 15-24 and 25-34.

5. The disease pattern of all the age-groups from 35-44 to 75 and above is more or less the same. Prominent among them are heart diseases tuberculosis, neoplasms and cerebrovascular diseases.

6. The highest percentage of death during the year has occurred due to heart diseases i.e., 17.23%. This is followed by tuberculosis which claims 9.63% of deaths. When compared to the previous two years mortality due to both these diseases can be seen on the increase.

7. Diabetes mellitus is found as a cause of one death under the age-group 1-4.

### 3.7 Recommendation

1. The highest percentage of death due to heart diseases necessitates special studies in the field.

2. The reason for large number of deaths due to pneumonia among children has to be investigated.

3. Tuberculosis is another disease which requires special attention. T.B. Clinical facilities with trained staff have to be increased.

4. Large number of deaths among infants due to perinatal causes of morbidity and mortality necessitates the launching of intensive child care programmes. A very high percentage of death due to anoxic and hypoxic condition which is a unique feature of Cochin Corporation highlights the importance of studies in this regard with special reference to Cochin and its surroundings.

5. Death due to diabetes among children is a rare phenomenon. The reason for this has to be investigated and studies so as to take preventive steps against this.

TABLE II(1)

Statement showing the leading causes of death occurred in various medical institutions in Cochin Corporation according to sex-wise distribution for the year 1976

<i>Code No.</i>	<i>Cause of death</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
A5	Enteritis and other diarrhoeal diseases	8 (0.75)	13 (2.06)	21 (1.26)
A6-10	Tuberculosis	117 (11.11)	45 (7.14)	162 (9.63)
A20	Tetanus	23 (2.18)	24 (3.80)	47 (2.79)
A45-60	Neoplasms	87 (8.26)	52 (8.25)	139 (8.26)
A64	Diabetes mellitus	31 (2.94)	9 (1.43)	40 (2.38)
A67	Anaemias	21 (1.99)	25 (3.97)	46 (2.73)
A72	Meningitis	11 (1.04)	8 (1.27)	19 (1.13)
A79	Other diseases of nervous system	35 (3.32)	22 (3.49)	57 (3.38)
A81-84	Heart diseases	182 (17.28)	108 (17.14)	290 (17.26)
A85	Cerebro vascular disease	52 (4.94)	38 (6.03)	90 (5.35)
A92	Other pneumonia	53 (5.03)	37 (5.87)	90 (5.35)
A93	Bronchitis	28 (2.66)	19 (3.01)	47 (2.79)
A101	Intestinal obstruction and hernia	18 (1.71)	9 (1.43)	27 (1.60)
A104	Other diseases of digestive system	38 (3.61)	24 (3.80)	62 (3.68)
A134	Anoxic and hypoxic conditions not elsewhere classified	7 (0.66)	19 (3.01)	26 (1.54)
A135	Other causes of perinatal morbidity & mortality	36 (3.42)	24 (2.80)	60 (3.57)
A137	Symptoms and other ill-defined conditions	6 (0.57)	5 (0.79)	11 (0.65)
A138	Accidents	96 (9.12)	32 (5.08)	128 (7.60)
	Others	204 (19.17)	117 (18.57)	321 (19.07)
	Total	1053 (100.00)	630 (100.00)	1683 (100.00)

(Figurs in brackets indicate percentage).



TABLE II (2)

Age-wise distribution of the causes of death occurred in various hospitals in  
Cochin Corporation during the year 1976

Code No.	Less than 1						5-14		Total
	Male (2)	Female (3)	Total (4)	Male (5)	Female (6)	Total (7)	Male (8)	Female (9)	
A5	1	3	4 (1.67)	3	5	8 (4.57)	..	2	2 (1.61)
A6-10	3	4	7 (2.92)	6	6	12 (6.86)	3	3	6 (4.84)
A20	8	9	17 (7.08)	2	3	5 (2.89)	1	3	4 (3.22)
A45-61	..	1	1 (0.42)	1	..	1 (0.57)	6	2	8 (6.44)
A64	..	..	..	1	..	1 (0.57)	..	..	..
A67	..	1	1 (0.42)	3	3	6 (3.42)	1	..	1 (0.81)
A72	1	..	1 (0.42)	3	2	5 (2.87)	2	3	5 (4.03)
A79	2	1	3 (1.25)	12	11	23 (13.13)	9	7	16 (12.90)
A81-84	1	2	3 (1.25)	3	1	4 (2.20)	2	4	6 (4.84)
A85	1	1	2 (0.83)	..	1	1 (0.57)	2	..	2 (1.61)

A92	25	11	36 (15.00)	10	15	31 (17.91)	..	5	5 (4.03)
A93	..	1	1 (0.42)	3	4	7 (4.00)	..	3	3 (2.42)
A101	5	3	8 (3.33)	3	2	5 (2.87)	3	2	5 (4.03)
A104	5	2	7 (2.92)	5	8	13 (7.43)	3	5	8 (6.05)
A134	7	19	26 (10.83)	..	..	..	..	..	..
A135	36	24	60 (25.00)	..	..	..	..	..	..
A137	..	..	..	..	1	1 (0.57)	..	1	1 (0.82)
A138-150	..	..	..	3	1	4 (2.28)	7	7	14 (11.29)
Others	35	28	63 (26.25)	25	23	48 (27.43)	18	20	38 (30.69)
Total	130	110	240 (100.00)	89	86	175 (100.00)	57	67	124 (100.00)

TABLE II (2)—Contd.

Code No.	15-24		25-34		35-44				
	Male (11)	Female (12)	Total (13)	Male (14)	Female (15)	Total (16)	Male (17)	Female (18)	Total (19)
A5	..	..	..	..	..	..	1	..	1 (0.61)
A6-10	7	3	10 (9.00)	11	2	13 (14.13)	15	7	22 (13.41)
A20	..	4	4 (3.60)	3	1	4 (4.35)	4	4	8 (4.80)
A45-61	4	1	5 (4.50)	3	3	6 (6.52)	14	8	22 (13.41)
A64	3	..	3 (2.70)	..	..	..	1	..	1 (0.61)
A67	..	1	1 (0.90)	4	..	4 (4.35)	..	4	4 (2.44)
A72	3	1	4 (3.60)	..	..	..	..	1	1 (0.61)
A79	6	1	7 (6.30)	..	..	..	1	1	2 (1.22)
A81-84	5	11	16 (14.40)	5	6	11 (11.96)	20	20	40 (24.34)
A85	..	..	..	..	..	..	6	..	6 (3.66)
A92	..	..	..	1	1	2 (2.17)	3	1	4 (2.44)

A93	..	..	..	..	..	2	2	4	(2.44)
A101	..	..	1	..	1	2	..	2	(1.22)
A104	..	3	3	2	2	7	..	7	(4.27)
A134	..	..	..	..	..	..	..	..	..
A135	..	..	..	..	..	..	..	..	..
A137	..	1	1	..	1	1	..	1	(0.61)
A138-150	26	9	35	4	16	12	2	14	(8.54)
Others	10	12	22	11	32	18	7	25	(15.24)
Total	64	47	111	30	92	107	57	164	(100.00)

Figures in brackets show percentage.

TABLE II (2)—Contd.

Code No.	45-54			55-64		
	Male (20)	Female (21)	Total (22)	Male (23)	Female (24)	Total (25)
A5	1	1	2 (0.77)	..	2	2 (0.84)
A6-10	32	10	42 (16.22)	27	5	32 (13.39)
A20	2	..	2 (0.77)	1	..	1 (0.42)
A45-61	17	16	33 (12.74)	16	10	26 (10.88)
A64	2	3	5 (1.93)	14	3	17 (7.11)
A67	3	1	4 (1.54)	8	5	13 (5.44)
A72	2	..	2 (0.77)	..	..	..
A79	2	..	2 (0.77)	..	..	..
A81-84	45	17	62 (23.44)	40	24	64 (26.78)
A85	13	6	19 (7.33)	16	10	26 (10.88)

A92	1	..	1	1	2	3
			(0.39)			(1.26)
A93	10	2	12	3	3	6
			(4.63)			(2.01)
A101	3	2	5	1	..	1
			(1.93)			(0.42)
A104	8	..	8	8	1	11
			(3.09)			(4.60)
A134	..	..	..	..	..	..
A135	..	..	..	..	..	..
A137	2	1	3	1	1	2
			(1.16)			(0.84)
A138-150	18	3	21	10	1	11
			(8.12)			(4.60)
Others	27	9	36	23	1	24
			(13.90)			(10.02)
Total	188	71	259	169	70	239
			(100.00)			(100.00)

TABLE II (2)—Contid.

Code No.	65-74			75 & above			Total		
	Male (26)	Female (27)	Total (28)	Male (29)	Female (30)	Total (31)	Male (32)	Female (33)	Total (34)
A5	2	..	2 (1.06)	..	..	..	8	13	21 (1.26)
A6-10	13	5	18 (9.52)	..	..	..	117	45	162 (9.63)
A20	2	..	2 (1.06)	..	..	..	23	24	47 (2.79)
A45-61	18	9	27 (14.29)	8	2	10 (10.11)	87	52	139 (8.26)
A64	5	3	8 (4.23)	5	..	5 (5.55)	31	9	40 (2.38)
A67	2	7	9 (4.76)	..	3	3 (3.33)	21	25	46 (2.73)
A72	..	1	1 (0.53)	..	..	..	11	8	19 (1.13)
A79	1	..	1 (0.53)	2	1	3 (3.33)	35	22	57 (3.39)
A81-84	38	17	55 (29.10)	23	6	29 (32.22)	182	108	290 (17.26)
A85	8	10	18 (9.52)	6	10	16 (17.78)	52	38	90 (5.35)

A92	4	1	5 (2.65)	2	1	3 (3.33)	53	37	90 (5.35)
A93	6	2	8 (4.23)	4	2	6 (6.67)	28	19	47 (2.79)
A101	..	..	..	..	..	..	18	9	27 (1.61)
A104	2	1	3 (1.59)	..	..	..	38	24	62 (3.68)
A134	..	..	..	..	..	..	7	19	26 (1.54)
A135	..	..	..	..	..	..	36	24	60 (3.97)
A137	1	..	1 (0.53)	..	..	..	6	5	11 (0.65)
A138-150	5	3	8 (4.23)	3	2	5 (5.55)	96	32	128 (7.60)
Others	17	6	23 (12.17)	10	..	10 (11.13)	204	117	321 (19.07)
Total	124	65	189 (100.00)	63	27	90 (100.00)	1053	630	1683 (100.00)



TABLE II(3)

Statement showing the Leading causes of death occurred in various medical institutions in Cochin Corporation according to religion for the year 1976

Code No.	Cause of death	Hindu	Christian	Muslim	Total
(1)	(2)	(3)	(4)	(5)	(6)
A5	Enteritis and other diarrhoeal diseases	8 (0.98)	8 (1.29)	5 (2.02)	21 (1.26)
A6-10	Tuberculosis	71 (8.71)	60 (9.66)	31 (12.55)	162 (9.63)
A20	Tetanus	21 (2.58)	15 (2.42)	11 (4.45)	47 (2.79)
A45-61	Neoplasms	73 (8.96)	55 (8.86)	11 (4.45)	139 (8.26)
A64	Diabetes mellitus	18 (2.21)	17 (2.74)	5 (2.02)	40 (2.38)
A67	Anaemias	29 (3.56)	13 (2.09)	4 (1.62)	46 (2.73)
A72	Meningitis	8 (0.98)	6 (0.97)	5 (2.02)	19 (1.13)
A79	Other diseases of nervous system	25 (3.07)	23 (3.70)	9 (3.69)	57 (3.38)
A81-84	Heart diseases	131 (16.07)	116 (18.68)	43 (17.20)	290 (17.23)
A85	Cerebrovascular disease	43 (5.28)	36 (5.79)	11 (4.45)	90 (5.35)
A92	Other pneumonia	55 (6.75)	22 (3.54)	13 (5.26)	90 (5.35)
A93	Bronchitis emphysema & asthma	21 (2.58)	17 (2.74)	9 (3.04)	47 (2.79)
A101	Intestinal obstruction & hernia	23 (2.82)	3 (0.48)	1 (0.40)	27 (1.60)
A104	Other diseases of digestive system	24 (2.94)	28 (4.51)	10 (4.05)	62 (3.68)
A134	Anoxic and hypoxic conditions not elsewhere classified	13 (1.59)	8 (1.29)	5 (2.02)	26 (1.54)
A135	Other causes of perinatal morbidity and mortality	27 (3.31)	25 (4.03)	8 (3.24)	60 (3.57)
A137	Symptoms and others ill defined conditions	6 (0.74)	3 (0.48)	2 (0.81)	11 (0.65)
A138-150	Accidents	77 (9.45)	43 (6.92)	8 (3.24)	128 (7.60)
	Others	142 (17.42)	123 (19.81)	56 (22.67)	321 (19.07)
	Total	815 (100.00)	621 (100.00)	247 (100.00)	1683 (100.00)

(Figures in brackets show the percentage).

TABLE II (4)  
COVERAGE 1976  
Corporation of Cochin

Code No.	Cause of death	Sex	H	X	M	Total
1.	Rabies	M	4	..	..	1
		F	..	..	..	
2.	Drowning	M	..	1	..	1
		F	..	..	..	
3.	Debility malnutrition	M	1	..	..	1
		F	..	..	..	
4.	T.B. of lungs	M	1	5	4	15
		F	3	1	1	
5.	Bronchitis	M	1	1	1	4
		F	..	..	1	
6.	Asthma	M	1	1	3	8
		F	1	1	1	
7.	Pneumonia	M	1	2	..	5
		F	1	1	..	
8.	Other diseases of central nervous system	M	1	..	..	4
		F	3	..	..	
9.	Paralysis of cerebral apoplexy	M	2	2	..	7
		F	1	1	1	
10.	Meningitis	M	..	..	..	1
		F	1	..	..	
11.	Anaemia	M	1	..	..	1
		F	..	..	..	
12.	Congenital heart disease	M	2	..	..	7
		F	2	2	1	
13.	Heart attack	M	3	4	1	10
		F	1	..	1	
14.	Cirrhosis of liver	M	..	1	..	1
		F	..	..	..	
15.	Jaundice	M	1	..	..	1
		F	..	..	..	
16.	Cancer	M	2	..	..	5
		F	2	1	..	
17.	Hyperplasia of Prostate	M	..	1	..	1
		F	..	..	..	
18.	Prematurity	M	..	..	..	1
		F	..	1	..	
19.	Congenital malformation	M	..	..	..	1
		F	1	..	..	
20.	Malnutrition	M	..	..	1	1
		F	..	..	..	
21.	Semility	M	4	4	1	19
		F	5	3	2	
22.	Other symptoms	M	3	..	2	11
		F	5	..	1	
Total		M	25	22	13	60
		F	26	12	9	47
						107

## Report on Medical Certification of cause of Death in Calicut Corporation during 1976

### *Medical institutions included in the scheme*

During the period under report 3597 deaths have been reported from various hospitals in the city. The list of medical institutions with the number of death reports received from each is given below:

<i>Sl. No.</i>	<i>Name of hospital</i>	<i>No. of death certificate received</i>
1.	Institute of Maternity & Child Health	1239
2.	Medical College Hospital	1657
3.	Government General Hospital	209
4.	Government Mental Hospital	26
5.	Government Leprosy Hospital	23
6.	Corporation Beggar Home	12
7.	Government Homoeo Hospital	2
8.	Government Women & Children Hospital	73
9.	Nirmala Hospital	153
10.	Asok Hospital & Nursing Home	22
11.	Mt. Pleasant Hospital	13
12.	Rajendra Clinic & Nursing Home	3
13.	Karunakara Nursing Home	7
14.	Calicut Nursing Home	21
15.	Manohar Medical Hall	4
16.	Rajasree Maternity Home	3
17.	Haridas Clinic	1
18.	Thangals Hospital	4
19.	Western Hospital and Nursing Home	14
20.	C.M.A. Mussin Hospital	2
21.	Dr. Ramanathan's Nursing Home	12
22.	Ganesh Clinic and Nursing Home	2
23.	Dr. Ayyathan Clinic and Nursing Home	14
24.	Heart Hospital	23
25.	St. Mary's Hospital	9
26.	Co-operative Hospital	11
27.	Chest Hospital	34
28.	P.V.S. Hospital	4
29.	Gita Eye Hospital	1
<b>Total</b>		<b>3597</b>

Out of 3597 deaths reported during the year, 90% was reported from Government Hospitals and the remaining 10% from private Hospitals.

#### 4.2 Sexwise distribution of death due to leading causes

Table III (1) shows the sexwise analysis of leading causes of death.

##### 1. Enteritis and other diarrhoeal diseases

This group of diseases accounts for 5.20% of deaths during the year. The percentage of death due to this disease among males is 4.27 and that for females is 6.69. This shows the relative predominance of this disease among females.

2. *Tuberculosis*.—This disease is responsible for 8.90% of deaths. Male deaths outnumber female deaths; percentage of death being 10.44 and 6.40 respectively.

3. *Tetanus*.—Tetanus claims 2.69% of deaths during the period. Comparatively women are more affected by this disease.

4. *Bacterial diseases*.—Deaths due to this set of diseases come to 2.56% of total reported deaths. The percentage of female deaths is found to be higher than that of male deaths.

5. *Neoplasms*.—This disease claims 10.37% of total deaths. Male and female deaths due to this disease during the year come to 10.75 and 9.76% respectively.

6. *Diabetes mellitus*.—The percentage of death due to diabetes falls to 2.05. As in the case of neoplasms, male deaths are found to be more than female deaths.

7. *Anaemias*.—Death due to anaemias form 3.61% of reported deaths. The percentage of female death is found to be higher than that of male deaths. i.e. 4.33% and 3.24% respectively.

8. *Meningitis*.—This disease is responsible for 2.70% of total deaths. 2.34% of male deaths and 3.28% of female deaths are reported to be seen due to meningitis. This shows the predominance of this disease among females.

9. *Diseases of nervous system & sense organs*.—This set of diseases is responsible for 3.92% of deaths during the period under reference. Male and female deaths come to 3.73% and 4.22% respectively.

10. *Heart diseases*.—This is the most outstanding cause of death in the city. This set of diseases alone is responsible for 11.01% of reported deaths. Male deaths are found to be much higher than that of female deaths, the percentage being 12.23 and 7.42 respectively.

11. *Cerebrovascular diseases*.—This group of diseases claims 4.53% of deaths during the year. The percentage of female death is slightly higher than that of male deaths i.e. 4.88 and 4.32 respectively.

12. *Pneumonia*.—Pneumonia registers 3.73% of deaths. The percentage of death among females (4.73) is higher than that among males (3.10)

13. *Diseases of digestive system*.—Deaths due to this group of diseases constitute 2.78% of total deaths. The percentage of female deaths due to this disease group is slightly higher than that of male death.

14. *Causes of Perinatal morbidity and mortality*.—This set of diseases accounts for 4.25% of total deaths. Comparatively, percentage among female victims of this disease are more than male victims.

15. *Symptoms and other ill defined conditions*.—The percentage of death recorded under this category is not very high. It comes to only 1.35%.

16. *Accidents*.—Accidents claim 4.36% of deaths during 1976. Male deaths are much higher than that of female deaths i.e. 5.49% and 2.55% respectively.

In addition to the above discussed diseases, an important disease found in the report of institutions in the city is avitaminoses and other nutritional deficiency. It is found to have reported that 2.67% of total deaths have occurred due to this disease. The bronchitis, emphysema and asthma group also requires to be mentioned. The percentage of death comes to 1.86; male deaths outnumber female deaths.

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

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

0-1: During the year under report infant deaths reported from the institutions in Calicut Corporation constitute 20.60% of total reported deaths. The number one 'Killer' of infants is the causes of perinatal morbidity and mortality. The second major cause of infant death is bacterial diseases (9.99%). Other significant causes of infant deaths are enteritis, pneumonia avitaminoses and nutritional deficiency and tuberculosis.

1-4: Deaths in this age group forms 11.25% of total deaths reported during the year. The first major cause of death in this age group is enteritis and other diarrhoeal diseases with a claim of 14.36% of deaths. Diseases of nervous system, tuberculosis and avitaminoses and nutritional deficiency are also prominent in this age group.

5-14: This age group claims 8.67% of total deaths. Tetanus with 10.26% of deaths to its credit accounts for the highest percentage of death in this age group.

15-24: The percentage of mortality in this age group comes to 6.42. Accidents, heart diseases, neoplasmas & tuberculosis are reported to be the prominent causes of death in this age group.

25-34: Deaths in this age group form 6.86% of total deaths during the year. Tuberculosis which claims 16.60% of deaths tops the list of leading

causes of death in this age group. Next to this stands neoplasms with 12.55% of deaths to its credit. Accidents and heart diseases also deserve to be mentioned as prominent causes of death in this age group.

35-44: The percentage of death in this age group amounts to 8.51. Neoplasms is the first major killer disease in this age group during the year; percentage of death being 16.67. Heart diseases, tuberculosis & diseases of digestive system are other significant causes of death in this age group.

45-54: 12.66% of mortality reported during the year under reference is found to be occurred in this age group. As in the case of the previous age group, neoplasms continues to be the top most cause of death in this age group too. This disease alone is responsible for 20.18 % of deaths. Heart diseases and tuberculosis which claim 17.98 and 13.60% of deaths respectively are also prominent.

55-64: Deaths in this age group amount to 13.04% of reported deaths during the year. Heart disease group alone claims 21.58% of death in this age group, thus becomes the number one cause of death in this age group. Neoplasms with 16.02% of deaths stands second. Tuberculosis and Cerebrovascular diseases recorded more than 10% of deaths under this age group.

65-74: The mortality cases under this age group form 8.73% of the total cases reported. Heart disease group shows its predominance in this age group also. It accounts for 23.25% of deaths. Next to heart disease stands neoplasms with 15.29% of deaths to its credit. When compared to other age groups, the percentages of deaths due to cerebrovascular diseases and diabetes mellitus are the highest in this age group.

75 and above Deaths under this age group come to 3.25%. Heart diseases and neoplasms are found to be the first and second major causes of death respectively. They claim 18.80% and 14.53% of death respectively. Cerebrovascular diseases are also significant in this age group.

#### 4.4 *Religion-wise distribution of death due to leading causes*

Religion-wise distribution of death due to leading causes is given in table III (3).

The three major religions in Calicut corporation are Hinduism, Christianity and Islam. Out of the 3597 deaths reported, 2158 are to Hindus 191 to Christians and 1248 to Muslims.

Neoplasm is reported to be the first major killer among both Hindus and Christians. However, among Muslims it is the heart diseases group which holds first rank as the major killer. The second major cause of death among Hindus and Christians is the heart diseases, while among Muslims it is tuberculosis. Diseases like tuberculosis, enteritis, tetanus, anaemias, meningitis and pneumonia are relatively more among Muslims. At the same time

diseases like neoplasms diabetes, cerebrovascular diseases, causes of perinatal morbidity and mortality are comparatively more among Christians. Victims of bacterial diseases, avitaminoses and other nutritional deficiency heart diseases and diseases of digestive system are comparatively more among Hindus.

Cirrhosis of liver and congenital anomalies of circulatory system are two diseases which require special attention in this city. These two diseases claim comparatively more victims among Christians.

It is to be noted that percentage of deaths due to disease like anaemias and tetanus are the lowest among Christians. Similarly percentage of death due to enteritis is the lowest among Hindus.

#### 4.5 Domiciliary deaths

Distribution of domiciliary deaths due to leading causes is given in Table III-4.

During the year under report details of 219 domiciliary deaths were collected. Out of this, 114 cases were to Hindus, 89 to Muslims and 16 to Christians. Ischaemic heart disease is the main cause of domiciliary deaths among Hindus. 10 out of 71 male deaths and 9 out of 43 female deaths are due to this disease. Tuberculosis takes next place as a cause of death.

Heart diseases and cerebrovascular diseases are found to be important causes of domiciliary deaths among Christians during the year 1976.

Among Muslims bronchitis, tuberculosis and heart diseases are found to be the major causes of deaths at home. Deaths due to tuberculosis and ischaemic heart diseases are more among females. More deaths are included under symptoms and other ill defined conditions. Bronchitis is found to be higher among males.

#### 4.6 Summary of findings

1. Causes of perinatal morbidity and mortality group could be traced as the topmost killer disease of infants during 1976. This is followed by pneumonia.
2. Enteritis and other diarrhoeal diseases and tetanus are noted as two major causes of child mortality reported from the hospital in the city.
3. We find heart diseases, neoplasms and tuberculosis is taking a heavy toll of life in the institutions in the city in 1976. Compared to females, deaths due to this disease is found to be very high among males.
4. Disease pattern recorded during the year is almost the same for all the ages above 35. Heart diseases, Neoplasms, diseases of digestive system and tuberculosis are noted as the most outstanding ones. Neoplasms causes more or less equal number of deaths as heart diseases.

5. During the year under report deaths due to accident in the 15-34 age group is 36% of total deaths. Neoplasms and heart diseases are other two major killer diseases found in this age segment.

6. Deaths due to enteritis, tetanus, bacterial diseases, pneumonia, anaemia and meningitis are noted to be comparatively higher among females during the year.

7. The percentage of death due to heart disease is the highest among Hindus and the lowest among Christians.

8. In comparison with other two religions the percentage of death due to enteritis, tuberculosis, tetanus, anaemia, pneumonia and meningitis can be seen as the highest among Muslims.

9. It is seen that mortality due to accidents and neoplasms is the lowest among Muslims in 1976.

10. When compared to the previous two years the percentage of death due to heart diseases and neoplasms shows an increasing tendency while that of tuberculosis fluctuates.

#### 4.7 Recommendations

1. The city recorded the highest percentage of reported deaths among infants during the year. This requires investigation and undertaking of effective preventive steps to fight the major killer diseases like causes of perinatal morbidity and mortality and pneumonia.

2. High percentage of death due to heart diseases requires in depth-study. Several do's and don'ts are announced to heart patients. There fore treatment at home is not possible for heart patients. This highlights the importance of starting intensive cardiac units in the hospitals. Further better housing facilities have to be provided to people residing in the congested, unhealthy dwellings. This is of utmost importance since one of the possible reasons for heart attacks and nervous breakdown is tension created by overcrowding in living.

3. High mortality due to tuberculosis points out the necessity of providing more clinical facilities along with the appointment of qualified T.B. Health Visitors.

4. To fight waterborne diseases like enteritis, protected water supply system should be improved.

5. Malnutrition among children, pregnant women and nursing mothers deserve special attention. A very high percentage of death reported due to tetanus in the 5-14 age group has to be considered urgently. Steps have to be taken effectively to immunise children against tetanus, polio diphtheria and whooping cough.



6. Top priority has to be accorded in the hospitals for the treatment of neoplastic patients since the percentage of death due to this disease is very high in the hospitals in the city.

TABLE III (1)

Statement showing the leading causes of death occurred in various medical institutions in Calicut Corporation according to sex for the year 1976

<i>Code No.</i>	<i>Cause of death</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)
A2	Typhoid	21 (0.94)	8 (0.58)	29 (0.81)
A4	Bacillary dysentery and amoebiasis	26 (1.17)	4 (0.29)	30 (0.83)
A5	Enterities and other diarrhoeal diseases	95 (4.27)	92 (6.69)	187 (5.20)
A6-10	Tuberculosis	232 (10.44)	88 (6.40)	320 (8.90)
A16	Whooping cough	17 (0.76)	30 (2.18)	47 (1.31)
A20	Tetanus	57 (2.56)	40 (2.91)	97 (2.69)
A 21	Other bacterial disease	50 (2.25)	42 (3.06)	92 (2.56)
A 25	Measles	19 (0.85)	11 (0.80)	30 (0.83)
A 27	Viral encephalities	19 (0.88)	19 (1.38)	38 (1.06)
A45-61	Neoplasms	239 (10.75)	134 (9.76)	373 (10.37)
A 64	Diabetes mellitus	58 (2.61)	17 (1.24)	75 (2.05)
A 65	Avitaminoses & other nutritional deficiency	52 (2.34)	44 (3.20)	96 (2.67)
A 67	Anaemias	72 (3.24)	58 (4.22)	130 (3.61)

(1)	(2)	(3)	(4)	(5)
A 72	Meningitis	52 (2.34)	45 (3.28)	97 (2.70)
A 79	Other diseases of nervous system and sense organs	83 (3.73)	58 (4.22)	141 (3.92)
A-81 81	Heart disease	294 (13.23)	102 (7.42)	396 (11.01)
A 85	Cerebrovascular disease	96 (4.32)	67 (4.88)	163 (4.53)
A 92	Other pneumonia	69 (3.10)	65 (4.73)	134 (3.73)
A 93	Bronchitis, emphysema and asthma	45 (2.02)	22 (1.60)	67 (1.86)
A 98	Peptic Ulcer	27 (1.21)	1 (0.71)	28 (0.78)
A 101	Intestinal obstruction & hernia	17 (0.76)	10 (0.73)	27 (0.75)
A 102	Cirrhosis of Liver	58 (2.61)	18 (1.31)	76 (2.11)
A 104	Other diseases of digestive system	61 (2.74)	39 (2.84)	100 (2.78)
A 105	Acute nephritis	13 (0.58)	16 (1.16)	29 (0.80)
A 127	Congenital anomalies of heart	17 (0.76)	23 (1.67)	40 (1.11)
A 130	All other congenital anomalies	27 (1.21)	12 (0.88)	39 (1.09)
A 137	Symptoms and other ill defined conditions	29 (1.36)	18 (1.32)	47 (1.35)
A 138- 150	Accidents	122 (5.49)	35 (2.55)	157 (4.36)
Perinatal causes		81 (3.64)	72 (5.24)	153 (4.25)
Others		175 (7.91)	184 (1.34)	359 (9.98)
Total		2223 (100.00)	1374 (100.00)	3597 (100.00)

Figures in brackets indicate percentage.

TABLE III (2)

Age-wise distribution of leading causes of death occurred in various institutions in Calicut Corporation during the year 1976

Code No.	Less than 1				1-4				5-14			
	M	F	T	M	F	T	M	F	T	M	F	T
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
A2	1	..	1 (0.13)	1	2	3 (0.74)	2	2	4 (1.28)			
A4	..	1	1 (0.13)	1	..	1 (0.25)	1	2	3 (0.96)			
A5	37	30	67 (9.04)	24	24	48 (14.36)	16	12	28 (8.97)			
A6-10	27	20	47 (6.34)	17	22	39 (9.65)	7	4	11 (3.53)			
A16	5	12	17 (2.29)	11	13	24 (5.94)	1	5	6 (1.92)			
A20	12	10	22 (2.87)	7	7	14 (3.47)	21	11	32 (10.26)			
A21	39	35	74 (9.99)	5	3	8 (1.98)	1	2	3 (0.96)			
A25	3	1	4	12	6	18	4	4	8			
A27	..	3	3 (0.40)	9	6	15 (3.71)	7	7	14 (4.49)			
A45-61	3	2	5 (0.67)	5	6	11 (2.72)	11	10	21 (6.73)			
A64	..	..	..	..	..	..	..	1	1 (0.32)			
A65	28	19	47 (6.36)	14	14	28 (6.93)	5	5	10 (3.21)			
A67	1	3	4 (0.54)	4	4	8 (1.98)	6	11	17 (5.45)			

A79	11	17	28	28	16	44	..	12	26
			(3.79)			(10.89)			(8.33)
A81-84	1	1	2	2	3	5	7	11	18
			(1.27)			(1.24)			(3.77)
A85	..	1	1	2	..	2	..	2	2
			(0.13)			(0.49)			(0.64)
A72	17	19	36	6	6	12	6	6	12
			(4.80)			(2.97)			(3.83)
A92	34	34	68	13	9	22	7	5	12
			(9.18)			(5.45)			(3.86)
A99	7	10	17	7	4	11	1	2	3
			(2.29)			(2.72)			(0.96)
A98	..	..	..	..	..	..	..	..	..
A101	5	1	6	1	2	3	..	1	1
			(0.81)			(0.74)			(0.32)
A102	4	..	4	3	1	4	5	2	7
			(0.59)			(.099)			(2.24)
A104	3	12	15	4	4	8	2	4	6
			(2.02)			(1.98)			(1.92)
A105	..	..	..	..	3	3	2	3	5
						(0.74)			(1.60)
A127	12	17	29	1	3	4	..	..	..
			(3.92)			(0.99)			..
A130	21	9	30	5	1	6	1	1	2
			(4.05)			(1.49)			(0.64)
A137	6	4	10	..	2	2	3	2	5
			(1.35)			(0.49)			(1.60)
A139-150	4	4	8	4	..	4	13	10	23
			(1.08)			(0.99)			(7.37)
A131-135	81	72	153	..	..	..	..	..	..
			(20.84)						..
Others	19	23	42	26	21	47	12	20	32
			(5.66)			(11.63)			(10.20)
Total	431	411	842	208	194	404	155	157	312

TABLE III (2)—Contd.

Code No.	15-24			25-34			35-44		
	M	F	T	M	F	T	M	F	T
(1)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
A2	9	1	10 (4.31)	2	3	5 (2.02)	..	..	..
A4	2	..	2 (0.86)	4	..	4 (1.62)	4	1	5 (1.63)
A5	1	2	3 (1.29)	4	1	5 (2.02)	1	1	2 (0.65)
A6-10	9	4	13 (5.60)	28	13	41 (16.60)	30	6	36 (11.76)
A16	..	..	..	..	..	..	..	..	..
A20	4	4	8 (3.45)	6	1	7 (2.83)	2	2	4 (1.31)
A21	..	..	..	1	..	1 (0.40)	..	1	1 (0.33)
A23	..	..	..	..	..	..	..	..	..
A27	1	1	2 (0.86)	..	2	2 (0.81)	1	..	1 (0.33)
A45-61	18	4	22 (9.48)	21	10	31 (12.55)	30	21	51 (16.67)
A64	..	..	..	4	1	5 (2.02)	5	..	5 (1.63)
A63	..	..	..	1	..	1 (0.40)	..	2	2 (0.65)
A67	5	3	8 (3.45)	6	4	10 (4.05)	5	5	10 (3.26)

A79	5	4	9	6	2	8	5	11
			(3.88)			(3.24)		(3.59)
A81-84	14	15	29	14	6	20	13	44
			(12.50)			(8.09)		(14.38)
A85	1	1	2	4	4	8	5	9
			(0.86)			(3.24)		(2.94)
A72	3	5	8	4	3	7	3	7
			(3.45)			(2.83)		(2.28)
A92	2	..	2	1	3	4	1	4
			(0.86)			(1.68)		(1.31)
A93	..	..	..	3	..	3	2	6
						(1.21)		(1.96)
A98	..	..	..	1	..	1	..	1
						(0.40)		(0.65)
A101	..	..	..	..	1	1	2	4
						(0.40)		(1.31)
A102	6	5	11	1	2	3	3	15
			(4.79)			(1.21)		(1.90)
A104	4	4	8	5	3	8	6	22
			(3.45)			(3.24)		(7.19)
A105	1	4	5	3	2	6	3	7
			(2.16)			(2.02)		(2.29)
A127	4	2	6	..	1	1	..	..
			(2.59)			(0.40)		..
A130	..	1	1	..	..	..	..	..
			(0.43)			..		..
A137	2	..	2	1	..	1	..	3
			(0.86)			(0.40)		(0.98)
A139-150	25	7	32	20	4	24	2	20
			(13.79)			(9.92)		(6.54)
A131-135	..	..	..	..	..	..	..	..
Others	14	35	49	10	31	41	18	35
			(21.12)			(16.60)		(11.44)
Total	130	102	232	150	97	247	102	306

TABLE III (2)—Contd.

Code No.	45-54			55-64		
	M	P	T	M	F	T
(1)	(20)	(21)	(22)	(23)	(24)	(25)
A2	4	..	4 (0.88)	1	..	1 (0.21)
A4	8	..	8 (1.75)	4	..	4 (0.85)
A5	3	1	4 (0.88)	3	4	7 (1.49)
A6-10	52	10	62 (13.60)	44	7	51 (10.89)
A16	..	..	..	..	..	..
A26	1	2	3 (0.66)	2	2	4 (0.85)
A21	1	..	1 (0.22)	2	.1	3 (0.64)
A25	..	..	..	..	..	..
A27	..	..	..	..	..	..
A45-61	59	33	92 (20.18)	46	29	75 (16.02)
A64	18	6	24 (5.26)	13	5	18 (3.85)
A65	1	2	3 (0.66)	2	2	4 (0.85)
A67	13	9	22	18	10	28

A81-84	67	15	82	81	20	101
			(17.98)			(21.58)
A85	19	11	30	26	24	50
			(6.58)			(10.68)
A72	5	2	7	4	1	5
			(1.54)			(1.07)
A92	1	5	6	3	4	7
			(1.32)			(1.49)
A93	4	1	5	9	..	9
			(1.10)			(1.92)
A98	7	--	7	10	--	10
			(1.50)			(2.14)
A101	5	2	7	1	..	1
			(1.50)			(0.21)
A102	13	2	15	6	2	8
			(3.29)			(1.71)
A104	12	4	16	13	2	15
			(3.51)			(3.21)
A105	1	..	1	..	..	..
			(0.22)			..
A127	..	..	..	..	..	..
A130	..	..	..	..	..	..
A137	3	1	4	5	3	8
			(0.88)			(1.71)
A138-150	13	..	15	15	1	16
			(3.29)			(3.42)
A131-135	..	..	..	..	..	..
Others	9	14	23	26	8	34
			(7.28)			(7.35)
Total	34	122	466	341	127	468
			(100.00)			(100.00)

Figures in brackets show the percentage



TABLE III (2)—Contd.

Ceds No.	65-74						75 and above						Total	
	M	F	T	M	F	T	M	F	T	M	F	T	F	T
(1)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)	(39)
A2	1	..	1 (0.32)	..	..	..	21	8	29 (0.81)					
A4	1	..	1 (0.32)	1	..	1 (0.82)	26	4	30 (0.83)					
A5	3	4	7 (2.23)	3	3	6 (5.12)	95	92	187 (5.29)					
A6-10	13	1	14 (4.46)	5	1	6 (5.12)	232	88	320 (8.90)					
A16	..	..	..	..	..	..	17	30	47 (1.30)					
A20	2	1	3 (0.96)	..	..	..	57	40	97 (2.69)					
A21	..	..	..	1	..	1 (0.64)	52	40	92 (2.56)					
A25	..	..	..	..	..	..	19	11	30 (0.83)					
A27	..	..	..	..	..	..	19	19	38					
A45-61	35	13	48 (15.29)	16	..	17 (14.53)	239	134	373 (10.97)					
A64	16	4	20 (6.31)	2	..	2 (1.71)	38	17	55 (2.05)					
A65	..	..	..	1	..	1 (0.85)	52	44	96 (2.67)					
A67	9	7..	16	5	2	7	72	58	130					

A81-84	58	15	73 (23.25)	19	3	22 (15.80)	194	102	396 (11.01)
A85	30	15	45 (14.33)	10	4	14 (11.97)	96	67	163 (4.53)
A72	3	..	3 (0.95)	..	..	..	52	45	97 (2.70)
A92	3	4	7 (2.23)	2	..	2 (1.71)	69	65	134 (3.73)
A93	5	3	8 (2.55)	5	..	5 (4.21)	45	22	67 (1.86)
A98	7	1	8 (2.55)	..	..	..	27	1	28 (0.78)
A101	2	..	2 (0.64)	1	1	2 (1.71)	17	10	27 (0.75)
A102	7	..	7 (2.23)	1	1	2 (1.71)	58	18	76 (2.11)
A104	1	..	1 (0.32)	1	..	1 (0.85)	61	39	100 (2.78)
A105	1	1	2 (0.64)	1	..	1 (0.85)	13	16	29 (0.80)
A127	..	..	..	..	..	..	17	23	40 (1.11)
A130	..	..	..	..	..	..	27	12	39 (1.08)
A137	4	4	8 (2.55)	2	2	4 (3.42)	29	18	47 (1.31)
A138-150	5	3	8 (2.55)	5	2	7 (5.98)	122	35	157 (4.36)
A131-135	..	..	..	..	..	..	81	72	153 (4.25)
Others	20	10	30 (9.58)	12	4	16 (13.77)	175	184	359 (9.95)
Total	228	86	314 (100.00)	88	29	117 (100.00)	2223	1374	3597 (100.00)

Figures in brackets show the percentage.

TABLE III (3)

Statement showing the leading causes of death occurred in various medical institutions in Calicut Corporation according to religion during the year 1976

<i>Code No.</i>	<i>Cause of death</i>	<i>Hindu</i>	<i>Christian</i>	<i>Muslim</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)	(6)
A2	Typhoid	20 (0.93)	1 (0.52)	8 (0.63)	29 (0.81)
A4	Bacillary dysentery and amoebiasis	20 (0.93)	..	10 (0.78)	30 (0.83)
A5	Enteritis and other diarrhoeal diseases	98 (4.58)	11 (5.76)	78 (6.15)	187 (5.20)
A6-10	Tuberculosis	176 (8.23)	11 (5.76)	133 (10.4)	320 (8.90)
A 16	Whooping cough	22 (1.02)	3 (1.57)	22 (1.71)	47 (1.31)
A 20	Tetanus	42 (1.96)	2 (1.05)	53 (4.18)	97 (2.70)
A 21	Other Bacterial diseases	6 (2.62)	4 (2.09)	32 (2.52)	92 (2.56)
A 25	Measles	18 (0.84)	..	12 (0.95)	30 (0.83)
A 27	Viral encephalitis	20 (0.94)	1 (0.52)	17 (1.34)	38 (1.06)
A 45-61	Neoplasms	241 (11.27)	24 (12.57)	108 (8.52)	373 (10.37)
A 64	Diabetes mellitus	51 (2.39)	7 (3.66)	17 (1.34)	75 (2.08)
A 65	Avitaminoses and other nutritional deficiency	68 (3.18)	3 (1.57)	25 (1.97)	96 (2.67)
A 67	Anaemias	73 (3.41)	2 (1.05)	55 (4.34)	130 (3.61)
A 79	Other diseases of nervous system and sense organs	91 (4.26)	5 (2.62)	45 (3.55)	141 (3.92)
A 81-84	Heart disease	240 (11.26)	15 (7.85)	141 (11.12)	396 (11.01)

(1)	(2)	(3)	(4)	(5)	(6)
A 85	Cerebravocular disease	114 (5.33)	12 (6.28)	32 (2.92)	163 (4.53)
A 72	Meningitis	45 (2.10)	4 (2.09)	48 (3.79)	97 (2.70)
A 92	Other pneumonia	78 (3.65)	..	56 (4.42)	134 (3.73)
A 93	Bronchitis emphysema and Asthma	39 (1.82)	3 (1.57)	25 (1.97)	67 (1.86)
A 98	Peptic Ulcer	16 (0.75)	1 (0.52)	11 (0.87)	28 (0.78)
A 101	Intestinal obstruction & hernia	15 (0.70)	..	12 (0.95)	27 (0.75)
A 102	Cirrhosis of Liver	49 (2.29)	7 (3.66)	20 (1.58)	76 (2.11)
A 104	Other diseases of digestive system	63 (2.94)	4 (2.09)	33 (2.60)	100 (2.78)
A 105	Acute nephritis	24 (1.12)	2 (1.05)	3 (0.24)	29 (0.80)
A 127	Congenital anomalis	27 (1.26)	5 (5.62)	8 (0.63)	40 (1.11)
A 130	All other congenital anomalis	21 (0.98)	2 (1.05)	16 (1.26)	39 (1.08)
A 137	Symptoms and other ill defined conditions	32 (1.50)	5 (2.62)	10 (0.79)	47 (1.31)
A 138-150	Accidents	93 (4.35)	12 (6.28)	52 (4.10)	157 (4.36)
	Perinatal causes	79 (3.69)	11 (5.76)	63 (4.96)	153 (4.25)
	Others	207 (9.78)	34 (17.80)	118 (9.38)	359 (9.92)
	Total	2138 100.00	191 100.00	1268 100.00	3597 100.00

Figures in brackets show percentage.

TABLE III-4  
Corporation of Calicut

(Coverage 1976)

<i>Code No.</i>	<i>Sex</i>	<i>H</i>	<i>X</i>	<i>M</i>	<i>T</i>
A2	M	1	..	1	2
	F	..	..	2	2
A4	M	..	..	..	..
	F	..	..	1	1
A5	M	..	2	2	2
	F	1	1	2	2
A6	M	12	..	4	16
	F	..	..	5	5
A 21	M	2	..	3	5
	F	..	..	3	3
A25	M	..	..	1	..
	F	..	..	..	1
A27	M	..	..	1	1
	F	..	..	..	..
A 28	M	..	..	..	..
	F	..	1	..	1
A 41	M	..	..	..	..
	F	..	..	..	..
A 43	M	1	..	..	1
	F	..	..	..	..
A 46	M	..	..	1	1
	F	..	..	1	1
A 47	M	2	..	..	2
	F	..	..	..	..
A 48	M	2	..	..	2
	F	..	..	1	1
A 55	M	..	..	..	..
	F	1	..	..	1
A 56	M	..	..	..	..
	F	3	..	1	4
A 58	M	4	1	4	9
	F	3	..	1	4
A 61	M	..	..	..	..
	F	1	..	..	1
A 64	M	2	..	..	2
	F	1	..	3	2
A 67	M	2	..	1	3
	F	4	..	3	7

<i>Code No.</i>	<i>Sex</i>	<i>H</i>	<i>X</i>	<i>M</i>	<i>T</i>
A 72	M	..	..	..	..
	F	..	..	1	1
A 79	M	..	..	3	3
	F	..	..	1	1
A 80	M	4	1	3	8
	F	..	..	..	..
A 81	M	1	1	1	3
	F	5	1	3	9
A 83	M	10	..	2	12
	F	9	3	5	17
A 84	M	2	..	..	2
	F	..	..	..	..
A 85	M	1	1	2	4
	F	..	1	1	2
A 90	M	..	..	1	1
	F	..	..	1	1
A 91	M	1	..	..	1
	F	..	..	..	..
A 92	M	1	1	..	2
	F	1	..	2	3
A 93	M	5	1	7	13
	F	4	..	4	8
A 96	M	1	..	..	1
	F	..	..	..	..
A 98	M	1	..	..	1
	F	..	..	..	..
A 104	M	2	..	..	2
	F	1	..	1	2
A 106	M	1	..	..	1
	F	..	..	..	..
A 111	M	1	..	..	1
	F	..	..	..	..
A 130	M	..	..	1	1
	F	1	..	1	2
A 135	M	..	..	..	..
	F	1	..	4	5
A 137	M	11	1	5	17
	F	7	3	1	11
Total	M	71	7	43	121
	F	43	9	46	98
		114	16	89	219

### 5.1 Report on 'Medical Certification of Cause of Death' in Quilon Municipality for the year 1976.

Quilon Municipality enjoys fairly good medical facilities. Most of the hospitals in the town are well equipped with modern equipments and medicines. These benefits are enjoyed by the people of suburban areas also.

#### Medical institutions covered under the scheme:

Medical institutions covered under the scheme and the death reports received from each are given below:

<i>Sl.No.</i>	<i>Name of institutions</i>	<i>No. of death reports received</i>
1.	District hospital	864
2.	Victoria hospital	133
3.	E.S.I. hospital	66
4.	Benziger hospital	149
5.	S.S.M. hospital	162
6.	Nair's hospital	82
7.	Prathiba Clinic	3
8.	A.G.C. hospital	1
Total		1460

The first three are Government hospitals and the remaining private. About 60% of the reported deaths occurred in the district hospital.

### 5.2 Sex-wise classification of death due to leading causes:

Table IV (1) gives the sex-wise classification of leading causes of death. Out of the 1460 cases, 882 are male cases and 578 female.

#### 1. Enteritis and other diarrhoeal diseases:

This group accounts for 3.21% of total deaths reported during the year 1976. The percentage of female deaths (3.81) due to this disease is found to be higher than that of male deaths (2.83).

#### 2. Tuberculosis:

The percentage of death due to this disease comes to 5.34. On comparison male victims are seen to be more than female victims, the percentage being 5.90 and 4.50 respectively.

### 3. *Tetanus:*

This disease is found to be responsible for 3.29% of total deaths. Morbid horror due to this disease is seen to be higher among females.

### 4. *Neoplasms:*

Deaths due to neoplasms constitute 3.08% of total reported deaths during the year. Male victims of this disease are noted to be more than female victims.

### 5. *Diabetes mellitus:*

The percentage of death due to this disease forms 2.26. This disease has shown greater affinity towards males.

### 6. *Anaemias:*

This disease is responsible for 5.41% of deaths during the year. On relative terms female victims are more than male victims, the percentage being 6.05 and 4.99 respectively.

### 7. *Meningitis:*

Death due to this disease forms 2.60% of total deaths. The percentage of male deaths is higher than that of female deaths; i.e. 2.83% and 2.25 respectively.

### 8. *Diseases of nervous system and sense organs:*

2.88% of deaths can be seen to have occurred due to this set of diseases. The percentage of female death is slightly higher than that of males.

### 9. *Heart diseases:*

This group of diseases ranks first among the leading causes during the year 1976. This group alone is responsible for 14.04% of reported deaths in the town. Male and female deaths come to 16.78% and 9.86% respectively. This is the most outstanding cause of death among males.

### 10. *Cerebrovascular diseases:*

Cerebrovascular diseases are responsible for 5.21% of reported deaths. The percentage of male and female deaths, 4.42 and 6.40 respectively shows the greater affinity of this disease towards females.

### 11. *Pneumonia:*

Death due to Pneumonia constitute 6.37% of deaths during the reference period. Comparatively this disease has taken more lives from females. Percentages of death among males and females are 5.44 and 7.79 respectively.



### 12. *Diseases of digestive system:*

Deaths due to this set of diseases come to 5.27% of total deaths reported. In this case also percentage of female victims is found to be more than that of male victims.

### 13. *Causes of perinatal morbidity and mortality:*

The percentage of death due to this group of diseases comes to 5.47. Female infants are comparatively more exposed to the danger of this disease than the male infants.

### 14. *Symptoms and other ill defined condition:*

The percentage of death due to ill defined conditions is seen to be 10.48.

### 15. *Accidents:*

Accidents are responsible for 4.59% of deaths during the year 1976. Male victims are more than female victims, the percentage of death being 5.10 and 3.80 respectively. In addition to the above diseases, bronchitis, diseases of respiratory system and intestinal obstruction and hernia also need to be mentioned. Bronchitis and intestinal obstruction and hernia are found to be significant among males and diseases of respiratory system among females.

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

A detailed statement showing age-wise distribution of leading causes of death is given in Table IV (2).

0-1: Infant deaths constitute 18.69% of reported deaths. The highest percentage of death has occurred in this age group. The causes of perinatal morbidity and mortality group which has taken 29.15% of lives from this age group tops the list of leading causes. This is followed by Pneumonia (18.45%) 17.71% of deaths were included under ill defined conditions.

1-4: This age group claims 12.48% of deaths reported during the reference year. Pneumonia with 16.57% deaths is found to be the most outstanding cause of death in this age group. Enteritis and other diarrhoeal diseases (7.39%), diseases of nervous system (6.63%) and tuberculosis (6.07%) are also prominent in this age group.

5-14: It is noted that during the year 1976, 6.30% of deaths have occurred in this age group. Diseases of digestive system group with 14.70% of deaths to its credit occupies first place among the leading causes of death in this age group. Tetanus, enteritis, tuberculosis, anaemias and diseases of nervous system also show their dominance in this age group. Deaths due to accidents are also significant.

15-24: Deaths under this age group form 7.19% of total deaths. Accidents alone account for 19.04% of deaths. Like the previous age group diseases of digestive system continue to be a prominent cause of mortality here

also. The percentage of death due to this disease comes to 12.38. Diseases of nervous system heart and diseases each claiming 8.57% of deaths also deserve to be treated as major causes of death in the age group.

25-34: This age group accounts for 7.36% of deaths reported during the year. As in the case of the previous age group, here also accident group with 12.94% of deaths continues to be the first major cause of death. Anaemias, heart diseases, tuberculosis and diseases of digestive system are the major diseases of death in this age group.

35-44: Deaths in this age segment constitute 9.58% of deaths during the period. Heart diseases group which claims 17.27% of deaths in this age group tops the list of leading causes. Diseases of digestive system and tuberculosis are also seen to be significant in this age group.

45-54: This age group claims 11.86% of deaths. Heart disease continues to be the number one killer in this age group too. The percentage of death due to this disease group goes as high as 25.58. Tuberculosis, anaemias and cerebrovascular disease are also notable.

55-64: This age group accounts for 10.89% of deaths. The number one 'Killer' is heart diseases; the percentage of death comes to 24.53. This is followed by cerebrovascular diseases and tuberculosis claiming 13.21%, 9.43% of deaths respectively.

65-74: Death under this age group forms 9.86% of reported deaths. Heart disease group continues to be the first major cause of death in this age group also. The percentage of death is 25.17. The second major cause of death is cerebrovascular diseases (13.28%). Neoplasms is another prominent cause of death found in this age group.

75 and above: The percentage of death occurred in this age group comes to 4.79. The highest percentage of death due to heart diseases is found to be in this age group, i.e. 37.14. The second major cause of mortality is cerebrovascular diseases (18.57%). The next major cause of death is anaemias with 10.00% of deaths.

#### 5.4. Religion-wise distribution of death due to leading causes

Table IV (3) shows the religion-wise distribution of leading causes of death.

The three major religions in Quilon Municipality are Hinduism, Christianity and Islam. Out of the 1460 death cases analysed in this report, 1023 are to Hindus, 233 to Christians and 204 to Muslims. Heart diseases group is the top most cause of mortality among all the religions. Pneumonia takes the second place as the major cause of death among Christians and Muslims and causes of perinatal morbidity and mortality in the case of Hindus.

Deaths due to tuberculosis, enteritis, diabetes, diseases of nervous system, causes of perinatal morbidity and mortality and accidents are found to be comparatively more among Hindus. However, percentages of deaths due to Meningitis, Pneumonia and diseases of digestive system are the lowest among them.

Comparatively deaths due to neoplasms, heart diseases, anaemia and Pneumonia are higher among Christians. At the same time they are relatively less affected by tetanus, enteritis and accidents. Though as a whole the percentage of death due to intestinal obstruction and hernia is not very high in this town, it is found to be significant among Christians causing 5.15% of deaths.

Comparatively, Muslims are worst affected by tetanus, meningitis and diseases of digestive and respiratory systems. However, they are least affected by neoplasms, diabetes and diseases of sense organs and nervous system.

#### 5.5. *Domiciliary deaths*

Domiciliary deaths due to various causes are given in Table IV (4).

Fourty five domiciliary deaths collected during the year are analysed here. Out of this 38 are to Hindus, 6 to Christians and one to Muslims.

Among all the three religions, senility seems to be the first major cause of death. Paralysis, heart attack and heart diseases, asthma, hernia, tuberculosis and cancer are other important diseases which caused more deaths among Hindus.

#### 5.6. *Summary of findings*

1. Heart diseases group is the most outstanding cause of death reported from Quilon Municipality. 14.04% of mortality in the town is found to be due to this disease. Male victims of this disease are more than female victims. This disease is seen to be most fatal to males above the age of 35.

2. Causes of perinatal morbidity and mortality and pneumonia occupy respectively the first and second places as the leading causes of infant deaths. These two diseases taken together led to 47.6% of infant deaths occurred during the year 1976.

3. The most outstanding causes of death among children of 1-4 are found to be enteritis, pneumonia, tuberculosis, tetanus, diseases of nervous system and sense organs and diseases of digestive system. Another major cause of death found among children of 5-14 is accidents.

4. For all the age groups except infants and very old, diseases of digestive system is an important cause of death in this town.

5. Deaths due to cerebrovascular diseases and neoplasms are noted to be comparatively higher above the age of 35.

6. Deaths due to tuberculosis, neoplasms, diabetes, bronchitis and accidents are higher among males.

7. Enteritis and other diarrhoeal diseases, anaemias, tetanus, pneumonia and diseases of digestive system have taken comparatively more lives from among the females during the year.

8. Percentages of death due to heart diseases, anaemias and pneumonia are higher among Christians. Diseases like enteritis, diabetes, diseases of sense organs and perinatal causes of morbidity and mortality had their sway over Hindus during the year.

#### 5.7. Recommendations

About 1/3 of infant deaths reported during the year is seen to be due to perinatal causes of morbidity and mortality. This high infant mortality due to the above cause is a key point of concern. Maternal and child health programmes require high priority to improve this condition.

2. The most outstanding cause of death is heart diseases. To fight this disease effectively more cardiac units have to be started in hospitals in the town.

3. Clinical facilities have to be improved for controlling tuberculosis. It is of utmost importance to undertake health education programmes including environmental cleanliness.

4. Deaths due to anaemia and nutritional deficiency prove the necessity of expansion of intensified nutritional programmes especially to the advantage of children and mothers belonging to the weaker sections of the community.

5. To control water borne diseases like enteritis and other diarrhoeal diseases improvement of protected drinking water supply system is a prerequisite.

6. Prevention of diseases is to be given more attention in our medical and health institutions. Death due to infectious diseases like tetanus, tuberculosis etc. can be reduced considerably if children are immunised against these diseases.

TABLE IV—I

Statement showing the leading cause of death occurred in certain Hospitals in Quilon Municipality according to sex during the year 1976

<i>Code No.</i>	<i>Cause of death</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
A 5	Enteritis and other diseases	25 (2.83)	22 (3.81)	47 (3.21)
A 6	Tuberculosis	52 (5.90)	26 (4.50)	78 (5.34)
A 20	Tetanus	21 (2.38)	27 (4.67)	48 (3.29)
A 45-61	Neoplasms	32 (3.63)	13 (2.25)	45 (3.08)
A 64	Diabetes mellitus	22 (2.49)	11 (1.90)	33 (2.26)
A 67	Anaemias	44 (4.99)	35 (6.05)	79 (5.41)
A 72	Meningitis	25 (2.83)	13 (2.25)	38 (2.60)
A 79	Other diseases of nervous system and sense organs	25 (2.83)	17 (2.94)	42 (2.88)
A 81-84	Heart disease	148 (16.78)	57 (9.86)	205 (14.04)
A 85	Cerebrovascular diseases	39 (4.42)	37 (6.40)	76 (5.21)
A 92	Other Pneumonia	48 (5.44)	45 (7.79)	93 (6.37)
A 93	Bronchitis, emphysema and asthma	28 (3.17)	11 (1.90)	39 (2.69)

<i>Code No.</i>	<i>Cause of death</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
A 96	Other diseases of respiratory system	17 (1.93)	19 (3.29)	36 (2.47)
A 101	Intestinal obstruction & hernia.	19 (2.15)	8 (1.38)	27 (1.85)
A 104	Other diseases of digestive system	42 (4.76)	35 (6.06)	77 (5.27)
A 135	Other causes of perinatal morbidity & mortality	45 (5.10)	35 (6.06)	80 (5.47)
A 137	Symptoms and other ill-defined conditions	94 (10.69)	59 (10.21)	153 (10.48)
A 138-150	Accidents	45 (5.10)	22 (3.80)	67 (4.59)
	Others	111 (12.59)	86 (14.88)	197 (13.49)
	Total	882 (100.00)	578 (100.00)	1460 (100.00)

Figures in brackets show percentage

TABLE IV-2  
Statement showing the leading cause of deaths according to age in Quillon Municipality during the year 1976

Code No.	Less than 1						5-14					
	M	F	T	M	F	T	M	F	T	M	F	T
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
A5	6	4	10 (3.70)	9	8	17 (7.39)	5	2	7 (6.86)			
A6-10	1	2	3 (1.11)	3	8	11 (6.07)	4	2	6 (5.88)			
A20	5	6	11 (4.06)	2	4	6 (3.31)	7	2	9 (8.82)			
A45-61	..	..	..	..	..	..	2	..	2 (1.96)			
A64	1	..	1 (0.37)	..	..	..	..	..	..			
A67	..	4	4 (1.48)	6	4	10 (5.52)	3	3	6 (5.88)			
A72	5	5	10 (3.70)	4	3	7 (3.87)	3	2	5 (4.90)			
A79	1	2	3 (1.11)	8	4	12 (6.63)	5	1	6 (5.88)			
A81-84	7	1	8 (2.95)	3	2	5 (2.79)	2	3	5 (4.90)			

A85	1	1	1	1	1	1	1	2
		(0.37)	..	..	..	..	..	(1.96)
A92	23	27	17	13	30	2	2	4
		(18.45)	..	..	(16.57)	..	..	(3.92)
A93	4	4	6	1	7	..	..	..
		(2.95)	..	..	(3.87)	..	..	..
A96	1	2	1	2	3	..	..	..
		(1.11)	..	..	(1.68)	..	..	..
A101	6	3	4	3	7	3	1	4
		(3.32)	..	..	(3.87)	..	..	(3.92)
A104	..	1	4	4	8	10	5	15
		(0.37)	..	..	(4.42)	..	..	(14.70)
A135	45	34	..	..	..	..	..	..
		(29.15)	..	..	..	..	..	..
A137	28	20	9	9	18	3	4	7
		(17.71)	..	..	(9.94)	..	..	(6.86)
A138-150	..	..	..	3	3	5	5	10
		..	..	..	(1.68)	..	..	(9.80)
Others	14	8	24	13	37	7	7	14
		(8.10)	..	..	(20.49)	..	..	(13.73)
Total	147	124	100	81	181	62	40	102
		(100.00)	..	..	(100.00)	..	..	(100.00)



TABLE IV-2--Contd.

Code No.	15-24			25-34			35-44		
	M	F	T	M	F	T	M	F	T
(1)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
A5	..	1	1 (0.95)	1	1	2 (1.85)	..	2	2 (1.44)
A6-10	..	1	1 (0.95)	7	1	8 (7.41)	8	2	10 (7.19)
A20	1	3	4 (3.81)	2	4	6 (5.50)	2	4	6 (4.32)
A45-61	1	..	1 (0.95)	2	2	4 (3.70)	6	1	7 (5.03)
A64	1	2	3 (2.86)	3	1	4 (3.70)	2	2	4 (2.88)
A67	1	3	4 (3.81)	2	7	9 (8.33)	5	3	8 (5.76)
A72	1	1	2 (1.90)	3	..	3 (2.78)	1	1	2 (1.44)
A79	4	5	9 (8.57)	..	3	3 (2.78)	3	..	3 (2.16)
A81-84	5	4	9 (8.57)	3	6	9 (8.33)	16	8	24 (17.87)



TABLE-IV-2—Cont'd.

Code No.	45-54		55-64			
	M	F	M	F		
(1)	(20)	(21)	(22)	(23)	(24)	(25)
A5	..	2	2 (1.16)	1	1	2 (1.25)
A5-10	8	6	14 (8.14)	14	1	15 (9.43)
A20	1	1	2 (1.16)	1	2	3 (1.89)
A45-61	6	2	8 (4.65)	7	1	8 (5.03)
A64	6	..	6 (3.49)	5	3	8 (5.03)
A67	9	4	13 (7.56)	6	2	8 (5.03)
A72	3	1	4 (2.33)	2	..	2 (1.25)
A79	1	..	1 (0.58)	2	1	3 (1.89)
A81-84	34	10	44 (25.58)	31	8	39 (24.53)
A85	6	6	12 (6.98)	13	8	21 (13.21)

A92	1	..	1 (0.58)	..	1 (0.63)
A93	4	1	5 (2.90)	6	2 (5.08)
A96	6	..	6 (3.49)	1	1 (1.25)
A101	2	..	2 (1.16)	..	.. (0.70)
A104	9	3	12 (6.98)	3	.. (1.89)
A135	..	..	..	..	..
A137	14	4	18 (10.47)	9	3 (7.55)
A138-150	1	1	2 (1.16)	2	3 (3.14)
Others	15	5	20 (11.62)	13	6 (11.95)
Total	126	46	172 (100.00)	116	43 (100.00)

TABLE-IV-2—Contd.

Code No.	65-74				75 & above				Total				
	M	F	T	M.	M.	F	T	M	F	T	M	F	T
(1)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)	(38)
A5	3	1	4 (2.80)	..	..	..	..	..	..	..	25	22	47 (3.21)
A6-10	3	3	6 (4.20)	4	..	4	..	..	..	..	52	26	78 (5.34)
A20	3	..	3	..	1	1 (1.43)	..	..	..	..	21	27	48 (3.29)
A45-61	6	4	10 (6.99)	2	2	4 (5.71)	..	..	..	..	32	13	45 (5.08)
A64	4	3	7 (7.89)	..	..	..	..	..	..	..	22	11	33 (2.26)
A67	9	1	10 (6.99)	3	4	7 (10.00)	..	..	..	..	44	35	79 (5.41)
A72	3	..	3 (2.10)	..	..	..	..	..	..	..	25	13	38 (2.60)
A79	..	..	..	1	1	2 (2.86)	..	..	..	..	25	17	42 (2.88)
A81-84	29	7	36 (25.17)	20	6	26 (37.14)	..	..	..	..	148	57	205 (14.04)
A85	7	12	19 (13.28)	6	7	13 (18.57)	..	..	..	..	39	37	76 (5.21)

A92	1	--	1	1	1	2	48	45	93
			(0.70)		(2.86)				(6.31)
A93	3	1	4	2	1	3	28	11	39
			(2.80)		(4.29)				(2.09)
A96	2	1	3	1	..	1	17	19	36
			(2.10)		(1.43)				(2.42)
A101	1	..	1	..	..	..	19	8	27
									(1.85)
A104	5	1	6	..	..	..	42	35	77
			(4.20)						(5.47)
A135	..	..	..	..	..	..	45	35	80
									(5.52)
A137	12	2	14	3	1	4	94	59	153
			(9.79)		(5.71)				(10.48)
A138-150	2	2	4	1	..	1	45	22	67
			(2.80)		(1.43)				(4.59)
Others	9	6	15	1	1	2	111	86	197
			(10.49)		(2.86)				(19.29)
Total	97	46	143	45	25	70	882	578	1460
			(100.00)		(100.00)				(100.00)

TABLE IV—3

Statement showing the leading causes of death occurred  
in Quilon Municipality according to Religion during  
the year 1976

<i>Code No.</i>	<i>Cause of death</i>	<i>Hindu</i>	<i>Christian</i>	<i>Muslim</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)	(6)
A 5	Enteritis and other diarrhoeal diseases	37 (3.62)	5 (2.14)	5 (2.45)	47 (3.21)
A 6-10	Tuberculosis	58 (5.67)	11 (4.72)	9 (4.41)	78 (5.34)
A 20	Tetanus	34 (3.32)	5 (2.14)	9 (4.41)	48 (3.29)
A 45-61	Neoplasms	34 (3.29)	8 (3.43)	3 (1.47)	45 (3.08)
A 64	Diabetes mellitus	28 (2.74)	4 (1.72)	1 (0.49)	33 2.26
A 67	Anaemias	55 (5.38)	14 (6.01)	10 (4.90)	79 (5.41)
A 72	Meningitis	25 (2.44)	6 (2.56)	7 (3.43)	38 (2.60)
A 79	Other diseases of nervous system & sense organs	33 (3.23)	6 (2.56)	3 (1.47)	42 (2.88)
A 81-84	Heart disease	145 (14.17)	36 (15.45)	24 (11.76)	205 (14.04)
A 85	Cerebrovascular disease	57 (5.57)	12 (5.15)	7 (3.43)	76 (5.21)
A 92	Other Pneumonia	55 (5.37)	22 (9.44)	16 (7.84)	93 (6.37)
A 93	Bronchitis emphysea and asthma	29 (2.83)	6 (2.56)	4 (1.96)	39 (2.67)

(1)	(2)	(3)	(4)	(5)	(6)
A 96	Other diseases of respiratory system	19 (1.86)	3 (1.28)	14 (6.86)	36 (2.47)
A 101	Intestinal obstruction and hernia	12 (1.17)	12 (5.15)	3 (1.47)	27 (1.85)
A 104	Other diseases of digestive system	49 (4.79)	12 (5.15)	16 (7.84)	77 (5.27)
A 135	Perinatal morbidity and mortality	59 (5.76)	11 (4.72)	10 (4.90)	80 (5.47)
A 137	Symptoms and other ill defined conditions	107 (10.46)	21 (9.01)	25 (12.25)	153 (10.48)
A 138-150	Accidents	52 (5.03)	5 (2.14)	10 (4.90)	67 (4.59)
	Others	135 (13.20)	34 (14.59)	28 (13.76)	197 (13.29)
	Total	1023 (100.00)	233 (100.00)	204 (100.00)	1460 (100.00)

(Figures in brackets give percentage)



TABLE IV—4

Quilon

Coverage 1976

<i>Code No.</i>	<i>Cause of death</i>	<i>Sex</i>	<i>H</i>	<i>X</i>	<i>M</i>	<i>T</i>
1	Tuberculosis	M	1	..	..	1
		F	1	..	..	1
2	Cancer	M	1	..	..	1
		F	1	1	..	2
3	Senility	M	5	1	..	6
		F	4	1	1	6
4	Heart attack	M	2	..	..	2
		F	2	1	..	3
5	Typhoid	M	..	..	..	..
		F	3	..	..	3
6	Paralysis of cerebral apoplexy	M	3	1	..	4
		F	3	..	..	3
7	Congenital heart disease	M	1	..	..	1
		F	2	..	..	2
8	Ulcer of stomach	M	..	1	..	1
		F	..	..	..	..
9	Suicide	M	1	..	..	1
		F	..	..	..	..
10	Asthma	M	1	..	..	1
		F	1	..	..	1
11	Bronchitis	M	..	..	..	..
		F	1	..	..	1
12	Obstructed hernia	M	1	..	..	1
		F	1	..	..	1
13	Not classifiable symptoms	M	..	..	..	..
		F	1	..	..	1
14	Gastroenteritis	M	1	..	..	1
		F	1	..	..	1
Total		M	17	3	..	20
		F	21	3	1	25

## Report on medical certification of cause of death in Alleppey Municipality for the year 1976

6.1 This report analyse 1090 death cases reported from the hospitals in Alleppey town during the year 1976. The list of hospitals with the number of death cases reported is given below.

<i>Sl. No.</i>	<i>Name of institution</i>	<i>Number of death reports received</i>
1	Medical College Hospital	957
2	District Hospital	116
3	Women & Children Hospital	10
4	E.S.I. Hospital	7
		1090

All the death cases were reported from the Government hospitals, and no case was reported from the Private medical institutions. Out of 1090 deaths, the cases reported from Medical College hospital alone come to 89%. This is the biggest medical institution in the town with advanced medical facilities.

### 6.2 *Sex-wise distribution of leading causes of death*

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

1. *Enteritis, and other diarrhoial diseases.*—This disease accounts for 5.50% of deaths reported from the hospitals during the year 1976. The percentage of death among females due to this disease (6.33) is higher than that among males (5.01)

2. *Tuberculosis.*—The percentage of death due to this disease comes to 8.44. This is the second major cause of death in Alleppey town during 1976. Male victims of this disease are found to be much more than that of female victims.

3. *Tetanus.*—Deaths due to tetanus come to 2.66%. Female victims out number male victims.

4. *Bacterial diseases.*—This set of diseases is responsible for 3.30% deaths. 3.09% of male deaths and 3.65% of female deaths fall under this disease group.

5. *Neoplasms.*—This group of diseases claims 4.95% of reported deaths. The percentage of female deaths due to this disease is found to be higher than that of male deaths i.e. 5.35% and 4.71% respectively.

6. *Anaemias*.—This disease accounts for 2.93% of deaths. 2.65% of male deaths and 3.41% of female deaths during the year are seen to have occurred due to anaemias.

7. *Meningitis*.—Meningitis claims 2.93% of deaths reported during the period under reference. Male victims of this disease out number that of females, the percentage of death being 3.39 and 2.20 respectively.

8. *Diseases of nervous system and sense organs*.—Death due to this set of diseases comes to 5.69%. The percentage of female death (7.54) is noted to be much higher than that of males (4.57).

9. *Heart diseases*.—This group of diseases alone claims 15.41% of deaths during the year 1976. In fact this is the number one killer reported from Alleppey town. The percentage of male death is nearly double than that of female deaths.

10. *Cerebrovascular diseases*.—The percentage of mortality due to this disease comes to 4.50%. Death due to this disease is comparatively more among males.

11. *Pneumonia*.—This disease claims 4.68% of deaths reported during 1976. 3.83% male deaths and 6.08% female deaths are reported to be due to this disease.

12. *Diseases of digestive system*.—5.78% of mortality reported during the year was due to this group of diseases. 5.74% of male deaths and 5.84% of female deaths are seen to have reported due to this disease during the year under report.

13. *Symptoms and other illdefined conditions*.—Symptoms and other ill defined conditions are noted to be responsible for 4.95% of deaths.

14. *Accidents*.—Accidents account for 4.77% of deaths. Deaths due to accidents are more among males.

In addition to the above discussed causes of death, diseases like avitaminoses and nutritional deficiency, bronchitis and intestinal obstruction and hernia are also found to be significant in this town.

### 6.3 *Distribution of death in different age groups due to leading causes*

The leading causes of death which take their toll from the different segments to age vary considerably. An analysis of age-wise mortality will be helpful to identify the age affinity of diseases.

Table V (2) gives the age-wise distribution of leading causes of death.

*Infants (0-1).*—Deaths under this age group constitute 11.74% of total deaths. The first major cause of infant death in Alleppey during the year is reported as bacterial diseases. In the other four centres, it is the perinatal causes of morbidity and mortality which has taken majority of lives in this age group. In Alleppey this cause of infant death is too in significant to be counted as a separate group.

Pneumonia stands second as the major cause of infant death during 1976. Tetanus, meningitis, heart diseases, and enteritis are noted as other significant causes of infant death in Alleppey town.

*1-4.*—Deaths in this age group form 14.01% of total deaths. Enteritis which claim 16.88% of deaths is the most outstanding cause of death in this age group. It is followed by diseases of nervous system and Pneumonia with 13.64% and 11.69% of deaths to their credit respectively.

*5-14.*—This age group claims 10.91% of total deaths. Diseases of nervous and digestive systems are the first two causes of death respectively. The third major cause of death in this age group is enteritis. Another significant cause of death reported is heart diseases.

*15-24.*—This age group takes 7.01% of deaths as its share. The accident group tops the list of leading causes of deaths in this age group. It is reported that 18.67% of deaths have occurred due to accidents alone. Next to accidents comes heart diseases with 9.33% of deaths to its credit. Diseases of nervous system is also significant in this age group.

*25-34.*—The percentage of death under this age group comes to 6.61. Tuberculosis with 16.67% of deaths tops the leading causes of death in this age group. Diseases of digestive system and accidents claim 15.28% of deaths each. Heart diseases are also notable in this age group.

*35-44.*—The percentage of death under this age group comes to 8.44. Tuberculosis continues to be the top-most cause of death in this age group too. It claims 19.39% of death. Tuberculosis is followed by heart diseases with 14.13% of deaths. Diseases of digestive system and accidents are also found to be prominent in this age group.

*45-54.*—Deaths in this age group constitute 13.03% of reported deaths. The first major cause of death in this age group is heart diseases. This disease group alone claims 26.76% of deaths in this age segment. This is followed by tuberculosis and neoplasms with 16.20% and 9.25% of deaths respectively to their credit.

*55-64.*—The percentage of mortality in this age group comes to 14.85. As in the case of the previous age group heart diseases with a claim of 23.46% of death continues to be the number one killer in this age group also.

Similarly tuberculosis occupies second place as the major killer disease. Cerebrovascular diseases and neoplasms are also found to be significant in this age group.

*65-74.*—This age group accounts for 9.17% of deaths. Here also, heart disease continues to be the first major cause of death. It claims 30% of deaths in this age group. Cerebrovascular diseases and tuberculosis are the other out standing causes of death in this age group.

*75-& above.*—Deaths in this age group constitute 4.23% of total deaths. Heart diseases group occupies first place as the major killer. The percentage of death due to heart diseases comes to 19.56. Cerebrovascular diseases, tuberculosis and accidents are other notable causes of death in this age group.

#### 6.4 *Religion-wise distribution of death due to leading causes*

The three major religions in Alleppey town are Hindus, Christianity and Islam. Out of 1090 deaths analysed in this report 709 are to Hindus, 240 to Christians and 141 to Muslims.

Religion-wise classification of death due to leading causes is shown in table V(3). The processed data relating to 1090 deaths indicated the following:—

Among all the three religions heart diseases are found to be the number one killer in Alleppey town. However, the percentage of death due to this disease is comparatively higher among Muslims. More than 20% of deaths among them is found to be due to this set of diseases alone.

Deaths due to tuberculosis, tetanus, bacterial diseases, and anaemias are relatively more among Hindus. At the sametime percentage of death due to enteritis is comparatively lower among Hindus. Further, the percentage of death due to accidents is also higher among Hindus.

On comparison, the percentage of mortality due to enteritis, diseases of nervous system meningitis, and cerebrovascular diseases is found to be higher among christians. Deaths due to neoplasms, tuberculosis, anaemias, pneumonia and diseases of digestive system are comparatively lower among them.

It is already seen that the percentage of death due to heart diseases is very high among Muslims. In addition to this, percentage of death due to neoplasm, pneumonia are also noted to be higher among them. Deaths due to tetanus, bacterial diseases, diseases of nervous system and cerebrovascular diseases are the lowest among Muslims.

### 6.5 domiciliary deaths

50 domiciliary deaths pertaining to Alleppey town, occurred during the year under reference, are analysed in this report. Out of this, 23 cases occurred to Hindus, 12 to Christians and 15 to Muslims.

Heart attack is the main cause of domiciliary deaths among Hindus. Rheumatism, fever, cancer, and diabetes are the causes reported for domiciliary deaths among Hindus.

Heart attack and anaemia account for domiciliary deaths among Christians. Rheumatism heart attack, fever, tuberculosis and as than are reported as the main cause of deaths among Muslims.

### 6.6 Summary of finding

The above analysis of the causes of death reported, disclose the following facts.

1. The most outstanding cause of death in Alleppey town is traced to be the heart diseases. Male victims of this disease are comparatively more than female victims.
2. Tuberculosis is the second major cause of death reported during the year 1976. Morbid horror from this disease is higher among males.
3. Other significant causes of death reported during the year are diseases of digestive system, enteritis and anaemias. Mortality due to these diseases is comparatively higher among females.
4. During the year under report the percentage of death due to heart diseases is noted to be the highest among Muslims.
5. The major causes of infant and child mortality are the bacterial diseases, pneumonia and diseases of nervous system and sense organs.
6. From the age of 35 onwards heart diseases are to be treated as the number one 'Killer' during the year.
7. When compared to the other two religions the percentage of death due to cerebrovascular diseases is very low among Muslims. So also deaths due to accidents.
8. Diseases of nervous system and sense organs have taken 8.75% of lives among christians. The corresponding figure for Muslims is only 2.12%.
9. Mortality reported due to causes of perinatal morbidity and mortality is negligible in this town.
10. Like other cities accidents recorded a very high percentage of death in the age group 15-34.

### 6.7 Recommendations

i Heart diseases and tuberculosis are the two outstanding causes of death in this town. To fight these diseases effectively adequate facilities including specialist services may be provided in the hospitals. It is highly necessary to start sufficient health education units in the dwelling places of the poor so as to make them aware of the precautionary measures to be taken against these diseases. Deaths due to heart diseases can be reduced to a limited extent by educating the people in diet pattern and other habits to be followed by the heart patients. The reason for the increasing trend in heart diseases may be investigated.

2. Considering the large number of deaths occurred due to diseases of nervous system and sense organs, more facilities may be provided in the hospitals for the treatment of such patients.

3. It is essential to take possible steps for the prevention of pollution of air and water so as to control diseases like enteritis, bronchitis, asthma and tuberculosis.

4. Deaths due to nutritional deficiency and anaemia point out the urgent necessity of the extension of nutritional programmes by the Government and voluntary agencies. The problem of malnutrition with its concomitant effect on the health of mother and child as well as the issue of high infant mortality is a key point of concern.

5. To reduce morbid horror from infectious diseases like tetanus and tuberculosis, measures have to be taken to immunise children against these diseases.

TABLE V—I

**Statement showing the leading causes of death occurred in various hospitals in Alleppey Municipality according to sex during the year 1976**

<i>Code No.</i>	<i>Cause of death</i>	<i>Male</i>	<i>Female</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)
A 5	Enteritis and other diarrhoeal diseases.	34 (5.01)	26 (6.33)	60 (5.50)
A 6-10	Tuberculosis	65 (9.57)	27 (6.57)	92 (8.44)
A 20	Tetanus	14 (2.06)	15 (3.65)	29 (2.66)

(1)	(2)	(3)	(4)	(5)
A 21	Other bacterial diseases	21 (3.09)	15 (3.65)	36 (3.30)
A 45-61	Neoplasms	32 (4.71)	22 (5.33)	54 (4.95)
A 65	Avitaminoses & other nutritional deficiency	17 (2.50)	8 (1.95)	25 (2.29)
A 67	Anaemias	18 (2.65)	14 (3.41)	32 (2.93)
A 72	Meningitias	23 (3.39)	9 (2.20)	32 (2.93)
A 79	Other diseases of nervous system	31 (4.57)	31 (7.54)	62 (5.69)
A 81-84	Heart diseases	123 (18.11)	45 (10.95)	168 (15.41)
A 85	Cerebrovascular diseases	32 (4.71)	17 (4.14)	49 (4.50)
A 92	Other Pneumonia	26 (3.83)	25 (6.08)	51 (4.68)
A 93	Bronchitis emphysema & asthma	17 (2.50)	9 (2.20)	26 (2.39)
A 101	Intestinal obstruction and herina	19 (2.80)	11 (2.68)	30 (2.75)
A 104	Other diseases of digestive system	39 (5.74)	24 (5.84)	63 (5.78)
A 137	Symptoms and other Ill- defined conditions	36 (5.30)	18 (4.38)	54 (4.95)
A 138-150	Accidents	34 (5.01)	18 (4.38)	52 (4.77)
	Others	98 (14.45)	77 (18.77)	175 (16.08)
	Total	679 (100.00)	411 (100.00)	1090 (100.00)

(Figures in brackets show percentage)



TABLE V-2

Statements showing the leading cause of death occurred in various institutions in Alleppey Municipality according to age for the year 1976

Code No.	Less than 1			1-4			5-14		
	M	F	T	M	F	T	M	F	T
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
A5	6	2	8 (6.25)	12	14	26 (16.88)	6	6	12 (10.08)
A6-10	..	..	..	1	4	5 (3.25)	4	2	6 (5.04)
A20	9	3	12 (9.38)	1	3	4 (2.59)	1	5	6 (5.04)
A21	12	11	23 (17.94)	2	2	4 (2.59)	2	..	2 (1.68)
A45-61	..	..	..	1	1	2 (1.30)	3	3	6 (5.04)
A65	5	1	6 (4.68)	4	4	8 (5.19)	3	1	4 (3.36)
A67	..	3	3 (2.34)	3	4	7 (4.55)	2	3	5 (4.20)
A72	6	3	9 (7.03)	4	4	8 (5.19)	3	..	3 (2.52)
A79	2	3	5 (3.91)	8	13	21 (13.64)	10	4	14 (11.76)

A81-84	3	6	9 (7.03)	3	3	6 (3.90)	5	11 (9.24)
A85	..	1	1 (0.78)	..	1	1 (0.64)	..	..
A92	13	9	22 (17.19)	9	9	18 (11.69)	4	6 (5.04)
A93	1	..	1 (0.78)	7	2	9 (5.84)	1	1 (0.84)
A101	5	3	8 (6.25)	..	1	1 (0.65)	3	6 (5.04)
A104	..	3	3 (2.34)	3	..	3 (1.95)	3	13 (10.92)
A137	..	..	..	1	3	4 (2.60)	1	1 (0.84)
A138-150	..	..	..	..	..	..	4	1 (4.20)
Others	9	9	18 (14.10)	13	14	27 (17.55)	7	18 (15.16)
Total	71	57	128 (100.00)	72	82	154 (100.00)	68	51 (100.00)

TABLE V-2—Contd.

Code No.	15-24			25-34			35-44		
	M	F	T	M	F	T	M	F	T
(1)	(11)	(12)	(19)	(14)	(15)	(16)	(17)	(18)	(19)
A5	1	..	1 (1.33)	..	..	..	1	1	2 (2.17)
A6-10	2	1	3 (4.00)	11	1	12 (16.67)	10	6	16 (17.39)
A20	..	2	2 (2.66)	1	..	1 (1.39)	1	..	1 (1.09)
A21	1	..	1 (1.33)	..	..	..	2	1	3 (3.26)
A45-61	1	3	4 (5.33)	1	1	2 (2.77)	3	3	6 (6.52)
A65	..	..	..	1	..	1 (1.39)	..	..	..
A67	..	1	1 (1.36)	1	1	2 (2.77)	3	..	3 (3.26)
A72	..	2	2 (2.66)	..	..	..	..	..	..
A79	3	3	6 (8.00)	1	1	2 (2.77)	1	1	2 (2.18)

A81-84	5	2	7 (9.33)	7	..	7 (9.72)	8	5	13 (14.13)
A85	1	..	1 (1.33)	1	1	2 (2.77)	3	1	4 (4.35)
A92	..	1	1 (1.33)	1	..	1 (1.39)	..	..	..
A93	..	2	2 (2.60)	1	..	1 (1.39)	..	..	..
A101	1	..	1 (1.33)	..	1	1 (1.39)	2	2	4 (4.35)
A104	2	4	6 (8.00)	7	4	11 (15.28)	6	4	10 (10.80)
A137	4	1	5 (6.70)	4	1	5 (6.94)	2	2	4 (4.35)
A138-150	9	5	14 (18.67)	6	5	11 (15.28)	6	1	7 (7.61)
Others	9	9	18 (24.00)	4	9	13 (18.08)	6	11	17 (18.00)
Total	39	36	75 (100.00)	47	25	72 (100.00)	..	..	92 (100.00)

TABLE V-2—Contd.

Code No.	45-54			55-64		
	M	F	T	M	F	T
(1)	(20)	(21)	(22)	(23)	(24)	(25)
A5	2	1	3 (2.11)	2	..	2 (1.29)
A6-10	17	6	23 (16.20)	14	4	18 (11.10)
A20	..	1	1 (0.70)	..	1	1 (0.61)
A21	1	1	2 (1.40)	..	..	..
A45-61	8	5	13 (9.15)	10	2	12 (7.40)
A65	1	..	1 (0.70)	2	1	3 (1.90)
A67	2	..	2 (1.40)	3	1	4 (2.50)
A72	2	..	2 (1.40)	4	..	4 (2.50)
A79	3	..	3 (2.10)	3	4	7 (4.30)
A81-84	22	16	38 (26.76)	35	3	38 (23.46)

A85	4	2	6 (4.23)	9	5	14 (8.64)
A92	..	..	..	..	1	1 (0.61)
A93	2	1	3 (2.10)	2	1	3 (1.85)
A101	4	..	4 (2.80)	4	..	4 (2.50)
A104	5	3	8 (5.60)	5	1	6 (3.70)
A137	9	3	12 (8.40)	8	1	9 (5.50)
A138-150	1	2	3 (2.10)	6	1	7 (4.32)
Others	13	5	18 (12.75)	24	5	29 (17.92)
Total	96	46	142 (100.00)	131	31	162 (100.00)

TABLE V-2 (a)—Contd.

Code No.	65-74				75 & above				Total			
	M	F	T	T	M	F	T	T	M	F	T	T
(1)	(26)	(27)	(28)	(28)	(29)	(30)	(31)	(31)	(32)	(33)	(34)	(34)
A5	1	1	2 (2.00)	2	3	1	4 (8.70)	4	34	26	60 (5.50)	60 (5.50)
A6-10	6	2	8 (8.00)	8	..	1	1 (2.17)	1	65	27	92 (8.44)	92 (8.44)
A20	1	..	1 (1.00)	1	..	..	..	..	14	15	29 (2.66)	29 (2.66)
A21	1	..	1 (1.00)	1	..	..	..	..	21	15	36 (3.30)	36 (3.30)
A45-61	4	2	6 (6.00)	6	1	2	3 (6.52)	3	32	22	54 (4.96)	54 (4.96)
A65	..	..	..	..	1	1	2 (4.34)	2	17	8	25 (2.29)	25 (2.29)
A67	2	1	3 (3.00)	3	2	..	2 (4.34)	2	18	14	32 (2.90)	32 (2.90)
A72	3	..	3 (3.00)	3	1	..	1 (2.17)	1	23	9	32 (2.90)	32 (2.90)
A79	..	2	2 (2.00)	2	..	..	..	..	31	31	62 (5.69)	62 (5.69)
A81-84	25	5	30 (30.00)	30	9	..	9 (19.56)	9	123	45	168 (15.41)	168 (15.41)

A85	12	2	14 (14.00)	2	4	6 (13.04)	32	17	49 (4.50)
A92	1	..	1 (1.00)	..	1	1 (2.17)	26	25	51 (4.68)
A93	2	3	5 (5.00)	1	..	1 (2.17)	17	9	26 (2.38)
A101	..	..	..	..	1	1 (2.17)	19	11	30 (2.75)
A104	1	2	3 (3.00)	..	..	..	39	24	63 (5.78)
A137	4	5	9 (9.00)	3	2	5 (10.87)	36	18	54 (4.95)
A138-150	..	1	1 (1.00)	2	2	4 (8.70)	34	18	52 (4.77)
Others	9	2	11 (11.00)	4	2	6 (13.11)	98	77	175 (16.14)
Total	72	28	100 (100.00)	29	17	46 (100.00)	679	411	1090 (100.00)



TABLE V—3

Statement showing the religion-wise distribution of death due to leading cause in Alleppey Municipality during the year 1976

<i>Code No.</i>	<i>Cause of death</i>	<i>Hindu</i>	<i>Christian</i>	<i>Muslim</i>	<i>Total</i>
(1)	(2)	(3)	(4)	(5)	(6)
A5	Enteritis & other diarrhoeal diseases	30 (4.23)	19 (7.92)	11 (7.80)	60 (5.50)
A 6-10	Tuberculosis	62 (8.74)	18 (7.50)	12 (8.51)	92 (8.44)
A 20	Tetanus	21 (2.96)	6 (2.50)	2 (1.42)	29 (2.66)
A 21	Other bacterial diseases	27 (3.81)	6 (2.50)	3 (2.13)	36 (3.30)
A 45-61	Neoplasms	36 (5.38)	8 (3.33)	10 (7.09)	54 (4.95)
A 65	Other nutritional deficiency	18 (2.54)	5 (2.08)	2 (1.42)	25 (2.29)
A 67	Anaemias	24 (3.39)	4 (1.67)	4 (2.84)	32 (2.94)
A 72	Meningitis	20 (2.82)	10 (4.17)	2 (1.42)	32 (2.94)
A 79	Other diseases of nervous system and sense organs	38 (5.36)	21 (8.75)	3 (2.12)	62 (5.69)
A 81-84	Heart diseases	104 (14.67)	35 (14.58)	29 (20.57)	168 (15.41)
A 85	Cerebrovascular diseases	35 (4.94)	13 (5.42)	1 (0.71)	49 (4.50)
A 92	Other pneumonia	32 (4.51)	10 (4.17)	9 (6.38)	51 (4.68)
A 93	Bronchitis, emphysema & asthma	17 (2.40)	7 (2.92)	2 (1.42)	26 (2.33)
A 101	Intestinal obstruction & hernia	21 (2.96)	4 (1.67)	5 (3.55)	30 (2.75)

(1)	(2)	(3)	(4)	(5)	(6)
A 104	Other diseases of digestive system	44 (6.20)	11 (4.58)	8 (5.67)	63 (5.78)
A 137	Symptoms and other ill-defined conditions	33 (4.65)	16 (6.67)	5 (3.55)	54 (4.95)
A 138-150	Accidents	38 (5.36)	12 (5.00)	2 (1.42)	52 (4.77)
	Others	109 (15.38)	35 (14.57)	31 (21.98)	175 (16.16)
	Total	709 (99.99)	240 (100.00)	141 (100.00)	1090 (100.00)

(Figures in brackets show percentages)

TABLE V—4

### Alleppey Municipality coverage 1976

Sl. No.	Cause of death	Hindu			Christian			Muslim		
		M	F	T	M	F	T	M	F	T
1	Tuberculosis	..	1	1	1	..	1	2	..	2
2	Cancer	2	..	2	..	..	..	..	..	..
3	Heart attack	7	..	7	3	..	3	2	..	2
4	Anaemia	..	..	..	1	1	2	..	1	1
5	Pneumonia	..	..	..	..	1	1	..	..	..
6	Diabetes mellitus	1	1	2	..	1	1	..	..	..
7	Rheumatism	3	2	5	..	1	1	3	..	3
8	Oldage	..	..	..	..	..	..	1	..	1
9	Fever	3	..	3	..	1	1	1	1	2
10	Asthma	1	1	2	..	1	1	1	1	2
11	Others	..	1	1	1	..	1	2	..	2
	Total	17	6	23	6	6	12	12	3	15

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

A detailed analysis of the leading causes of death in each of the five centres under the scheme has already been made separately. An inter-city comparison of the leading causes of death in the five centres, i.e. Trivandrum, Cochin, Calicut, Quilon and Alleppey is attempted in the following paragraphs.

The figures furnished in Table VI (1) show the percentages of death due to leading causes in Trivandrum, Cochin, Calicut, Quilon and Alleppey.

TABLE VI—1

<i>Sl. No.</i>	<i>Diseases</i>	<i>Trivandrum</i>	<i>Cochin</i>	<i>Calicut</i>	<i>Quilon</i>	<i>Alleppey</i>
1	Heart diseases	15.58	17.23	11.01	14.01	15.41
2	Tuberculosis	3.41	9.63	8.9	5.34	8.44
3	Neoplasms	7.88	8.26	10.37	3.08	4.95
4	Diseases of nervous system & Sense organs	3.31	3.38	3.92	2.88	5.69
5	Diseases of digestive system	4.29	3.68	2.78	5.27	5.78
6	Enteritis & other diarrhoeal diseases	5.55	1.26	5.20	3.21	5.50
7	Causes of Perinatal morbidity and mortality	6.62	3.57	4.25	5.47	..
8	Symptoms and other ill-defined conditions	2.93	0.65	1.35	10.48	4.95

The above table makes it clear that heart disease is the first major cause of death in all the five cities during the year under report. However, the percentage of death due to heart diseases varies from city to city. The highest percentage of death is seen to have reported from Cochin and the lowest from Calicut.

Mortality due to tuberculosis is seen to be higher in Cochin, Calicut and Alleppey. In fact this is the second major cause of death in Alleppey and Cochin, next to heart diseases. Incidence of death due to this disease is comparatively lower in Trivandrum.

The percentage of death due to neoplasms is comparatively higher in the three Corporations. In Cochin this disease occupies third rank as the major killer. The lowest percentage of death due to neoplasms is recorded in Quilon town.

It is noted that the highest percentage of death due to diseases of digestive and nervous systems is in Alleppey town. The lowest percentage of death due to diseases of nervous system is recorded in Quilon. Death due to disease of digestive system is comparatively lower in Calicut.

Deaths due to enteritis and other diarrhoeal diseases are found to be comparatively more in Trivandrum, Calicut and Alleppey. More than 5% of deaths can be seen to have occurred in each of the three places. The lowest percentage of death due to enteritis is registered in Cochin Corporation.

The highest percentage of death due to causes of perinatal morbidity and mortality is recorded in Trivandrum. In Cochin the percentage of death due to this set of diseases is lower comparatively. In Alleppey the number of death reported due to this cause is too insignificant to be grouped separately.

Among symptoms and other ill defined conditions maximum of 10.48% was recorded in Quilon Municipality. Only 0.65% of deaths were grouped under this heading in Cochin.

*A comparative study of death due to leading causes among males and females in Trivandrum, Cochin, Calicut, Quilon & Alleppey:*

Table VI—2 gives the figures relating to the percentages of deaths due to leading cause among males and females in the five centres under the scheme.

The figures furnished in the table below disclose the following facts:

In all the five Municipal/Corporation areas heart diseases are seen to be higher among males. The difference in the percentage of death due to heart diseases among males and females is much marked in Calicut, Quilon and Alleppey. In Cochin there is only a slight difference.

The percentage of death due to tuberculosis is higher among males in all the cities except Trivandrum. In Trivandrum this disease has caused comparatively more deaths among females.

TABLE VI-2

Sl. No.	Diseases	Trivandrum		Cochin		Calicut		Quilon		Alleppey	
		Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1.	Heart diseases	16.67	14.49	17.28	17.14	13.23	7.42	16.78	9.86	18.17	18.95
2.	Tuberculosis	3.42	3.62	11.11	7.14	10.44	6.40	5.90	4.50	9.57	6.57
3.	Neoplasms	8.83	7.01	8.26	8.25	10.75	9.76	3.63	2.25	4.71	5.35
4.	Diseases of nervous systems and sense organs	2.81	3.62	3.32	3.49	3.73	4.22	2.83	2.94	4.57	7.54
5.	Diseases of digestive system	4.53	4.17	3.61	3.80	2.74	2.84	4.76	6.06	5.74	5.84
6.	Enteritis and other diarrhoeal diseases	5.63	5.75	0.75	2.06	4.27	6.69	2.83	3.81	5.01	6.33
7.	Perinatal causes of morbidity and mortality	6.29	6.14	3.42	3.80	3.64	5.24	5.10	6.06	..	..
8.	Symptoms and other ill defined conditions	3.26	2.68	0.57	0.79	1.36	1.32	10.64	10.21	5.30	4.38

Neoplasms is higher among females in Alleppey. In the other four centres it is higher among males. However, this difference is not so marked in all the places.

On comparison it is found that the percentage of death due to diseases of nervous system is higher among females in all the five places under study. This difference in the percentage is much marked in Alleppey; 4.57% for males and 7.54% for females.

Comparatively, female victims of diseases of digestive system are found to be more than male victims during the year 1976 in all the centres except Trivandrum. In Trivandrum male victims of this disease are reported to be more than that of females.

Enteritis and other diarrhoeal diseases have shown much affinity towards females in all the five areas under consideration. In contrast to this, we have the heart diseases with greater affinity towards males in all the five places.

No generalisation can be made with regard to the sex affinity of causes of perinatal morbidity and mortality. However, in most of the centres female infants are found to be more exposed to the risk of death due to these causes. Trivandrum is the only exception to this.

Except in Cochin, in all places symptoms and ill defined conditions are noted as the cause of deaths more among males.

*A Comparative study of deaths due to major diseases among the three religions in the five centres:*

A religion-wise comparison of deaths due to leading causes is attempted in the following paragraphs. Table VI(3) gives the percentages of deaths due to leading causes among the three religions in Trivandrum, Cochin, Calicut, Quilon and Alleppey.

Figures furnished in the table below disclose the following facts:

It is not easy to draw a general conclusion with regard to the affinity of diseases towards a particular religion. The percentage of death due to major causes varies from religion to religion and place to place. In fact it depends on various factors like medical facilities available in the area, income of the people, healthy habits of the people, atmospheric conditions of the place and so on and so forth.

The percentage of death due to heart diseases is noted to be the highest among Hindus in Trivandrum. In Cochin and Alleppey, Christians and Muslims respectively claims the highest percentage of death due to this set of diseases. Deaths due to tuberculosis are seen the highest among Hindus in Alleppey, among Christians & Muslims in Cochin.

TABLE VI—3

Sl. No.	Diseases	Hindus						Christians						Muslims					
		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)			
(1)	(2)																		
1.	Heart diseases	16.82	16.07	11.26	14.17	10.67	15.40	18.68	7.85	15.45	14.58	16.67	17.20	11.12	11.76	20.57			
2.	Tuberculosis	3.59	8.71	8.23	5.67	8.74	3.66	9.66	5.76	4.72	7.50	2.42	12.55	6.15	4.41	8.51			
3.	Neoplasms	7.73	8.96	11.27	3.29	5.38	12.01	8.86	12.57	3.43	3.33	0.96	4.45	8.52	1.47	7.09			
4.	Diseases of nervous system & Sense Organs	3.08	3.07	4.26	3.23	5.36	2.61	3.70	2.62	2.56	8.75	3.64	3.69	3.55	1.47	2.12			
5.	Diseases of digestive system	4.15	2.94	2.94	4.79	6.20	5.74	4.51	2.09	5.15	4.58	5.76	4.05	2.60	7.84	5.67			
6.	Enterities & other diarrhoeal disease	5.08	0.98	4.58	3.62	4.23	6.27	1.29	5.76	2.14	7.92	5.15	2.02	6.15	2.45	7.80			
7.	Perinatal causes of Morbidity & mortality	5.41	3.31	3.69	5.76	..	7.05	4.03	5.76	4.72	..	5.45	3.24	4.96	4.90	..			
8.	Symptoms & other ill-defined conditions	3.12	0.74	1.50	10.46	4.65	3.13	0.48	2.62	9.01	6.67	3.03	0.81	0.79	12.25	3.55			

The highest percentage of death due to diseases of nervous system and sense organs is recorded by christians in Alleppey and the lowest by Muslims in Quilon. Mortality due to this disease is comparatively higher among Hindus also in Alleppey. Comparatively more victims of enteritis and other diarrhoeal diseases are found among Muslims and Christians in Alleppey town. The percentage of death due to this disease is the highest among Hindus in Trivandrum. Deaths due to causes of perinatal morabidity and mortality among all the three religions are noted to be too insignificant in Alleppey town to be treated separately. Mortality due to this disease is lower in Cochin also.

*A comparative study of major causes of death during 1974, 1975 and 1976 in Trivandrum, Cochin, Calicut, Quilon and Alleppey:*

We have already seen that the major cause of death during 1976 was heart diseases in all the five places under report. Tuberculosis, neoplasms, enteritis, diseases of nervous and digestive systems and perinatal cause of death are also found to be significant. Some of these diseases are gaining more importance as major killers while others are losing importance.

A comparative study of the leading causes of death in 1976 with those of the two preceding years attempted in the following paragraphs will reveal this fact.

Table VI (4) given below shows the percentage of death due to leading causes during the year 1974, 1975 and 1976.

During the years 1974, 1975 and 1976 heart diseases group occupies first rank as the major 'Killer'. Further, a continuous rise in the percentage of death due to this disease is noted in Cochin, Calicut and Alleppey. Trivandrum registers a slight fall in the percentage of death due to this disease. In Quilon it is fluctuating during these years. It was 8.26% in 1974. Then it has risen to 14.07% in 1975 fallen slightly to 14.04% in 1976.

The percentage of death due to tuberculosis is comparatively lower in Trivandrum. Further it shows a decreasing trend also. Though the percentage of death in Alleppey is not low it is falling steadily during these years. In Cochin there is a continuous steady rise in the percentage of death over three years. In Calicut and Quilon there is a fluctuating tendency for this figures.

The percentage of death due to neoplasms is seen to be rising continuously in Calicut and Quilon. Further, in Calicut the percentage of death is comparatively higher also. In other places the percentage is fluctuating during these years. This dreaded disease is casuing much alarm in the community. Steps are to be taken effectively for weeding out this disease.

The percentage of death due to disease of nervous system and sense organs is fluctuating during these years in all the five places under report.



TABLE VI—A

Sl. No.	Diseases	Triandrum			Cochin			Calicut			Quilon			Allephey		
		1974	1975	1976	1974	1975	1976	1974	1975	1976	1974	1975	1976	1974	1975	1976
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1.	Heart diseases	16.85	15.69	15.58	12.69	14.70	17.23	8.25	9.95	11.01	8.26	14.07	14.04	10.81	12.53	15.41
2.	Tuberculosis	4.23	3.90	3.41	7.27	8.89	9.63	8.20	8.12	8.90	4.05	3.96	5.34	9.96	9.13	8.44
3.	Neoplasms	9.37	7.71	8.26	7.23	7.16	8.26	7.75	8.71	10.37	2.10	2.59	3.08	3.82	2.86	4.95
4.	Diseases of nervous system & Sense Organs	3.22	3.50	3.31	2.03	4.24	3.30	5.56	3.38	3.92	2.68	2.53	2.88	6.04	4.52	5.69
5.	Diseases of digestive system	4.02	3.90	4.29	3.07	11.24	3.68	3.82	3.89	2.78	8.33	9.86	5.27	5.23	5.35	5.78
6.	Enteritis & other diarrhoeal diseases	7.92	5.55	5.55	6.13	3.43	1.26	7.81	6.29	5.20	13.94	6.63	3.21	6.94	7.20	5.50
7.	Perinatal causes	2.36	6.93	6.62	4.05	4.30	3.57	4.41	6.38	4.75	4.05	4.51	5.47	..	..	..

Deaths due to disease of digestive system are comparatively higher in Quilon and Alleppey Municipalities. In Alleppey the percentage of death is slightly rising over the years. In Quilon it is fluctuating. So also with the other cities. During the year 1975 Cochin Corporation registered the highest percentage of death due to this set of diseases. Then it was 11.24%. During the succeeding year it has fallen steeply to 3.68%.

The percentage of death due to enteritis and other diarrhoeal diseases is showing a decreasing tendency in Cochin, Calicut and Quilon during these years. In Trivandrum it was 7.92% in 1974, then fallen to 5.55% in 1975 and remains steady during 1976. Alleppey marked a fluctuating tendency in the percentage of death during these years.

The percentage of death due to perinatal causes of morbidity and mortality is rising in Quilon.

In other places it is fluctuating over years. Trivandrum registers the highest percentage of death due to this causes during 1975 and 1976.

*Age affinity of major diseases during the year 1976:*

Age affinity of certain major diseases varies to a large extent. Analysis of causes of death in the five centres under the scheme reveals the fact of heart diseases showing much affinity towards ages above 35 during the year under review. This is clear from the following table (Table VI (5)).

TABLE VI (5)

**Percentage of death due to heart diseases during 1976  
occurred over the age 35**

<i>Disease</i>	<i>Trivandrum</i>	<i>Cochin</i>	<i>Calicut</i>	<i>Quilon</i>	<i>Alleppey</i>
Heart diseases	61%	85%	81%	82%	76%

In Cochin, Calicut, Quilon and Alleppey, tuberculosis shows a particular affinity towards age 25 to 64 during the year 1976. Trivandrum is an exception to this. In this city the highest percentage of death due to tuberculosis is noted in the age group 1-24. The percentage comes to 48. Table VI(b) gives the percentage of death due to tuberculosis occurred during 1976 under the age group 25 to 64.

TABLE VI (6)

**Percentage of death due to tuberculosis occurred under age group 25-64 in 1976**

<i>Disease</i>	<i>Trivandrum</i>	<i>Cochin</i>	<i>Calicut</i>	<i>Quilon</i>	<i>Alleppey</i>
Tuberculosis	29%	67%	60%	60%	77%

Pneumonia shows a special affinity towards age group 0-4. This can be seen from the following table.

TABLE VI(7)

**Percentage of death due to Pneumonia occurred under 0-4 age group in 1976**

<i>Disease</i>	<i>Trivandrum</i>	<i>Cochin</i>	<i>Calicut</i>	<i>Quilon</i>	<i>Alleppey</i>
Pneumonia	69%	74%	67%	86%	78%

Enteritis and other diarrhoeal disease group also shows greater affinity towards children. 0-14 age group witnessed the highest percentage of death due to this set of diseases in 1976. The following table makes it clear.

TABLE VI (8)

**Percentage of death during 1976 under the age group 0-14 due to enteritis and other diarrhoeal diseases**

<i>Diseases</i>	<i>Trivandrum</i>	<i>Cochin</i>	<i>Calicut</i>	<i>Quilon</i>	<i>Alleppey</i>
Enteritis and other diarrhoeal diseases	67%	67%	82%	73%	77%

## 7.2 Summary of findings in brief

1. The topmost cause of death during the year 1976 in all the places under the scheme was heart diseases. The percentage of mortalities

due to this disease was comparatively higher among males. On comparison with the two preceding years it is found that the incidence of this disease is on the increase in Cochin, Calicut and Alleppey. In Trivandrum and Quilon it shows a fluctuating tendency.

2. Mortality due to tuberculosis was comparatively lower in Trivandrum city. Cochin registered the highest percentage of death due to this disease during 1976.

3. Mortality due to diseases of digestive system was the highest in Alleppey during 1976. In all the places except Trivandrum the victims of this disease were comparatively more among females.

4. Perinatal causes of morbidity and mortality, Pneumonia and enteritis and other diarrhoeal diseases were the major 'killers' of infants and children. However when compared to the previous two years it is seen that incidence of enteritis and other diarrhoeal diseases is on the decrease in all the five places. Quilon recorded a rise in the percentage of death due to perinatal causes contrary to that of other centres.

5. Comparatively, incidence of diseases of nervous system and sense organs was higher during 1976 in Alleppey town.

6. In Alleppey and Calicut, more than 2% of death was found to have occurred due to avitaminoses and nutritional deficiency. The percentage of death due to anaemia was the highest in Quilon and the lowest in Trivandrum during the year under report.

7. During the year 1976 the percentage of death due to diabetes mellitus is found to be the lowest among Muslims in all the places.

8. Quilon, Cochin and Calicut recorded the highest percentage of death due to tetanus among Muslims. However, in Alleppey and Trivandrum it was the highest among Hindus and Christians respectively.

9. In Trivandrum, Cochin, Quilon and Alleppey the highest percentage of death due to accidents is noted among Hindus. In Calicut it is the highest among Christians.

10. Mortality due to accidents is very high in the age group 15-34 in all the five centres under the scheme.

11. Mortality due to the dreaded disease, neoplasm, is comparatively higher in Calicut and Cochin Corporations. In Cochin one death under the age group 1-4 is seen to have occurred due to diabetes mellitus.

### 7.3 Summary of Recommendations

The percentage of infant and child mortality has to be reduced considerably. Children are primarily and basically an asset to the society. They

constitute the potential human resources of the nation. Therefore the improvement of quality of children is of prime importance. Health education immunisation and antenatal care etc. are some of the steps that can be taken in this regard.

Many of the diseases to children and females mentioned in this report are seen to be due to poor and unsatisfactory level of nutrition. Malnutrition is directly or indirectly responsible for a very high percentage of death of children below 5 years. Malnutrition produces frail health and consequently the child cannot withstand minor illness like diarrhoea or measles. Those who survive will become retarded in their growth.

Malnutrition starts in children during their intrauterine life. Most mothers who have to nurture her foetus are underweight and anaemic. Further, breast feeding of the child also becomes impossible. Diarrhoea is rare under the age of 3 if the child is breast fed. The above facts highlight the importance of taking effective steps against malnutrition among children, pregnant women and nursing mothers. An appropriate investment in food provision has to be taken. CARE feeding programme, Special Nutrition programme and Applied Nutrition Programme may be extended to cover a larger number of children and expectant and nursing mothers. The trend of feeding-bottle fast replacing the breast has to be reversed and checked especially in the urban slum areas where water is unsafe and environmental sanitation is poor.

Infection is another important cause of death found among children. High priority has to be given for immunisation of children against tetanus, polio, diphtheria, tuberculosis and whooping cough.

Preventive methods should receive more attention in the hospitals and other public health institutions. Our disease-and-hospitals oriented health care system should be changed at least to some extent.

We find heart diseases dominating in all the five centres especially among male grown ups. Heart patients have to get medical aid as quickly as possible. As the heart patients have to observe certain do's and don'ts, treatment at home is not possible. Considering the above facts, more intensive cardiac units have to be started in the hospitals.

More housing facilities have to be provided in the overcrowded, dingy areas in the cities. This step may reduce tension in living and the resultant heart attacks and nervous breakdowns.

Tuberculosis is reported as a major killer disease during the year. There is acute necessity of undertaking steps for the appointment of qualified T.B. health visitors. The stock of B.C.G. Vaccine may be increased in clinical centres. There is also need for training personnel to run T.B. institutes.

Mortality due to neoplasm is high in all the centres especially Calicut and Cochin. This points out the need for taking effective steps for prevention, early diagnosis and improved treatment of this dreaded disease.

More sanitary facilities have to be provided in unhealthy, overcrowded slum areas in the cities. An environment improvement programme has to be launched. This programme should include protected water supply scheme sewerage and provision of community latrines.

Diseases like chronic bronchitis, pulmonary emphysema, asthma and diseases of digestive system are mainly due to the intake of polluted air and water. The main contributors of pollutants are industries and factories. Steps may be taken, at least, to avoid further pollution of air and water in the residential areas of the cities. Mortality due to diabetes under the age group 1-4 reported from Cochin Corporation, though not very high, requires special investigation in the field.

#### 7.4 Conclusion

Briefly, 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.

It is to be remembered in this context that health care should not be the prerogative of doctors alone. The paramedical staff can supplement their medical community. They can help to detect malnutrition of children, advise mother about food and hygiene and see to it that her children are properly immunised. Thus 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.

