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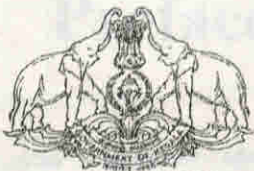
**Report on Survey of
Maternal & Infant Mortality Rate**

Kollam & Palakkad

Department of Economics & Statistics

Thiruvananthapuram

FEBRUARY 2006

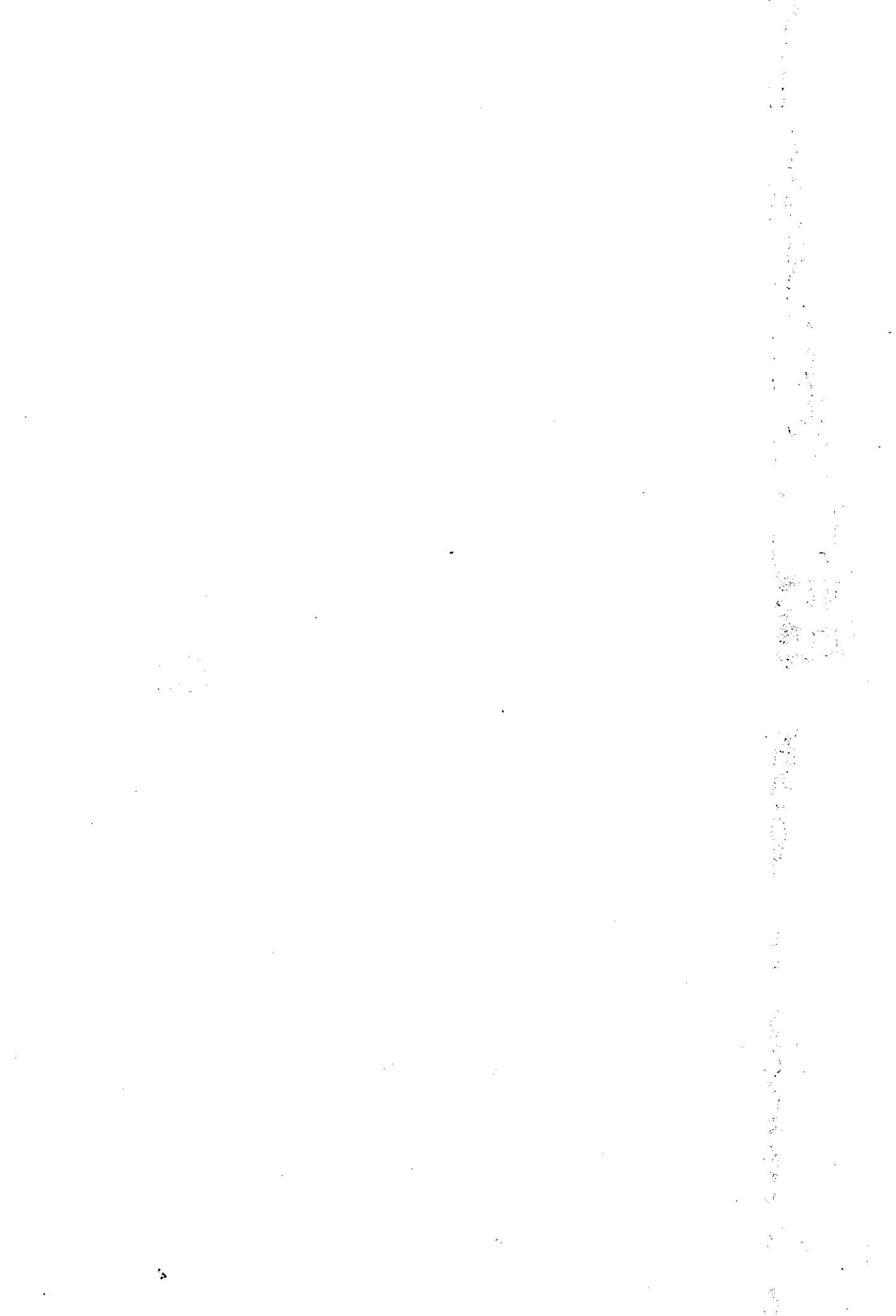


Government of Kerala

REPORT ON SURVEY OF MATERNAL MORTALITY RATE

KOLLAM & PALAKKAD

Department of Economics & Statistics, Kerala
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2006



Preface

Infant Mortality Rate and Maternal Mortality Rate can be considered as excellent indicators for public health. Due to the absence of reliable data on these two aspects the gravity of the problem could not be assessed correctly. In order to bridge the data gap in these areas, a study on the above subject was recommended by the Central Statistical Organisation in the State along with few other states. We have accepted the proposal and a pilot study was conducted in the districts Kollam and Palakkad on Infant Mortality and Maternal Mortality during May 2005. The study was successfully completed and report was submitted to the Central Statistical Organisation in time. The enthusiasm shown by the field officials in taking up and completing the survey in time is really appreciable.

This report is the outcome of the joint efforts of the Survey & Design Division consisting of Sri. S. Rajendran, Joint Director, Smt. Mollykutty C. Varkey, Research Officer, Sri. V. Nandakumar, Research Officer and Sri. Rajendran Kuttikkadu, U.D. Compiler under the guidance of Sri. K. Narayanan, Additional Director. Computer assistance was rendered by Sri. K.V. Abhilash, L.D. Compiler and Sri. S. Saseendran, U.D. Typist under the supervision of Sri. K. Vimalan, Deputy Director and assistance for printing report was given by Sri.P. Krishna Kumar, Research Assistant and Sri. S. Raju, L.D. Compiler.

It is understood that Kerala is the only state, which conducted this pilot study satisfactorily with the co-operation of Anganwady and Health Workers.

I would like to appreciate all the officers who have associated with this work and otherwise helped to make the pilot study a success.

**M. R. BALAKRISHNAN,
DIRECTOR**

Thiruvananthapuram,
Dated: 01/02/2006

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CHAPTER I

INTRODUCTION

Public health is one of the main areas to be assigned much importance in the development agenda of any country. Public health facilities and availability of nutritious food, influence the maternal mortality in society. Hence Maternal Mortality Rate can be considered as an indicator of public health of a society.

At present, there is a major data gap in the area of health, nutrition and infant and maternal mortality and the C.S.O expressed the need for taking urgent steps for collection of these data. It was decided to conduct a feasible study on the above subject in selected districts in the country utilizing the services of Anganwadi workers and health workers and the CSO requested the DES, Kerala to select one or two districts and to under take the survey. Accordingly, Department of Economics & Statistics, Kerala decided to take up the pilot study on Maternal and Infant Mortality Rate as per the format prescribed by the CSO

Objectives

The objective of the study is to compute data on Maternal mortality and infant mortality along with cause of death in the two selected districts based on the data available with the Health workers and Anganwadi workers

Scope and Coverage

In Kerala, Kollam and Palakkad districts were selected for the study, giving representation to two different geographical zones (midland and lowland). One of the districts has a city corporation as its head quarters, while the other district has got a vast tribal settlement. Thus the district selected are having more or less different social set up and different levels of development.

Methodology

The survey was conducted during May 2005. From the two selected districts, demographic particulars such as total number of couples between the age group 15-49, couples in all age groups, number of births taken place in that area, number of maternal death (cause wise), number of Infant death (cause wise), etc. for the period of 2003-04 and 2004-05

were culled out from the registers kept by the Anganwadi or Health workers. The details were collected by the Department staff with the help of the Anganwadi / health workers. The data collection in rural areas was comparatively easier than the same in urban areas

The fieldwork of the study could be completed within one month. The schedules were scrutinized and computerized in the Directorate.

Definitions

Maternal Mortality Rate

This is defined as the number of Maternal deaths due to puerperal causes per 100000 live births.

$$MMR = \frac{D_p}{B} \times 100000$$

where

D_p = deaths due to puerperal causes (deaths that occur to mothers within 42 days of delivery due to causes associated with pregnancy and child birth during a year). It will include deaths of women on account of pregnancy, childbirth or within 42 days of childbirth.

B = number of live births in the same year.

The number of live births to mothers in the age group 15-49 only is to be considered.

Infant Mortality Rate

It is defined as the number of deaths of children aged below one year per 1000 live births.

$$IMR = \frac{D^0}{B} \times 1000$$

where

D^0 = total number of deaths among children of age less than one year in the given region during the given period.

B = Total number of live births occurring in the given region during the given period.

CHAPTER II

MATERNAL MORTALITY

Brief analysis of the collected data reveals the following facts. There are 404714 and 419651 number of couples in the age group 15-49 in Kollam district during 03-04 and 04-05 respectively. The same for Palakkad district for the above shown period is 396844 and 414717. Total number of couples in all age groups is 627235 and 638333 for Kollam and 568367 and 593156 for Palakkad for the period 2003-04 and 2004-05 respectively.

Total Number of Married Couple in the selected samples (15-49 age group)

Sl. No.	Year	Kollam	Palakkad	Total
1	2003-04	404714	396844	801558
2.	2004-05	419651	414717	834368

The total number of deliveries in these districts is 31322 and 29745 (Kollam) and 37689 and 36442 (Palakkad) for the period.

Total Number of Live birth in the selected samples

Sl. No.	Year	Kollam			Palakkad			Total		
		M	F	Total	M	F	Total	M	F	Total
1	2003-04	16184	15074	31258	19175	18409	37584	35359	33483	68842
2	2004-05	15232	14476	29708	18597	17705	36302	33829	32181	66010
Total		31116	29550	60666	37772	36114	73886	69188	65664	134852

This is inclusive of the still birth to the tune of 92 (2003-04) and 103 (2004-05) in Kollam district and 167 (2003-04) and 171 (2004-05) to Palakkad district.

Total Number of Still Birth in the selected samples

Sl. No.	Year	Kollam			Palakkad			Total		
		M	F	Total	M	F	Total	M	F	Total
1.	2003-04	59	33	92	107	60	167	166	93	259
2	2004-05	59	44	103	110	61	171	169	105	274
Total		118	77	195	217	121	338	335	198	533

The birth rate in Kollam district during 2003-04 is 11.89 and in 2004-05 it is 11.22. The same in Palakkad district is 14.04 and 13.44 respectively. The number of maternal death in Kollam is 21 for (2003-04) and 8 for (2004-05). In Palakkad the same is 17 in (2003-04) and 13 in (2004-05). The number of maternal deaths recorded in rural areas was 54 and to that of urban area was 5 during that period.

Total Number of Maternal Death in the selected samples

Sl. No.	Year	Kollam	Palakkad	Total
1.	2003-04	21	17	38
2.	2004-05	8	13	21
Total		29	30	59

The cause wise details of maternal death

The major cause of Maternal Mortality is found as bleeding at the time of delivery and after delivery. 12 number of maternal deaths were recorded in 2003-04 and 4 cases in 2004-05 due to this. Maternal deaths due to all other causes comes to 26 during 2003-04 and 17 during 2004-05

Other important causes of death recorded are problems related to heart, Hepatitis, Respiratory pneumonia, etc. It can be seen that almost all of these deaths occurred were

attended by skilled health personnel or the traditional birth attendants. Out of the 59 maternal deaths reported, 58 occurred in the Hospitals, and health personnel were present at the time of death. Even Though the death occurred within that post partum period was 28, the deaths actually occurred due to the complication due to pregnancy, childbirth and puerperium were only 7. Other deaths were due to cancer, heart problems, accidents, brain problems, T.B., Kidney problem, Respiration problems, Jaundice etc.

The Maternal Mortality Rate in Kollam district during 2003-04 and 2004-05 is 67.18 and 26.93 respectively. Maternal Mortality Rate in Palakkad district during 2003-04 is 45.23 and in 2004-05 it is 35.82.

CHAPTER III

INFANT MORTALITY

In the case of infant mortality, the following facts were revealed in the study. As regards Kollam district, the number of infant deaths occurred was 144 during 2003-04 and out of which 62 are female children. The percentage of female death is 43%. Number of death occurred within 7 days from delivery is 53 and within the period 7 days to 28 days (from the date of birth) is 16. The number of delivery taken place within the period of one year is 31322 for 2003-04 in Kollam District. During 2004-05 the number of infant deaths occurred was 196 and out of which 93 are female children. The percentage of female death is 47%. Number of deaths occurred within 7 days from delivery is 96. The number within the period 7 days to 28 days from the date of birth is 39. The number of delivery taken place within the period of one year is 29745. As regards Palakkad District the number of infant death occurred was 223 during 2003-04 and out of which 86 are female children. The percentage of female death is 38.6 %. Number of death occurred within 7 days from delivery is 109. The number within the period 7 days to 28 days from the date of birth is 35. The number of delivery taken place within the period of one year is 37689. During 2004-05, 265 of infant deaths occurred out of which 110 are female children. The percentage of female death is 41.5%. Number of deaths occurred within 7 days of delivery is 132. The number within the period 7 days to 28 days from the date of birth is 43. The number of delivery taken place within the period of one year (2004-05) is 36442. According to the study the main cause of

Infant mortality is problem related to heart. Other causes reported are respiratory infection, premature birth etc.

Total Number of Infant Death in the selected samples

Sl. No.	Year	Kollam			Palakkad			Total		
		M	F	Total	M	F	Total	M	F	Total
1	2003-04	82	62	144	137	86	223	219	148	367
2	2004-05	103	93	196	155	110	265	258	203	461
Total		185	155	340	292	196	488	477	351	828

Infant Mortality Rate in Kollam during 2003-04 is 4.60 and in 2004-05 it is 6.59. The same in Palakkad district during 2003-04 and 2004-05 is 5.93 and 7.30 respectively.

The district wise details of Maternal and infant death are attached in different tables. The tables relating to urban area and rural area are also attached.

Item	2003-04	2004-05
Number of Couples (age group 15- 49)	801558	834368
All Age group	1195602	1231489
No. of still births	259	274
No. of mothers died	38	21
No. of Infant death - Male	219	258
No. of Infant death - Female	148	203
Infant death - Total	367	461

CHAPTER IV

CONCLUSION

The details of local bodies in the selected districts are as follows. There is one Municipal Corporation, 2 Municipalities and 69 Grama Panchayats in Kollam district. In Palakkad there are 4 Municipalities and 90 Gramapanchayats. Details of MMR & IMR were collected ward wise from all the rural and urban areas.

Details of Local bodies and Projected Population in the selected districts

Sl.No.	District	No of Local bodies				No of wards				Projected population	
		Grama panchayat	Municipality	Municipal Corporation	Total	Grama panchayat	Municipality	Municipal Corporation	Total	2003-04	2004-05
1	Kollam	69	2	1	72	1030	56	50	1136	2628509	2647288
2	Palakkad	90	4	-	94	1180	130	-	1310	2675635	2700951
Total		159	6	1	166	2210	186	50	2446	5304144	5348239

The Maternal Mortality Rate and Infant Mortality Rate data have been collected from the records maintained by the Anganwadi workers and from the notings made by the JPHNs. The Anganwadi network in the State is so strong that every Panchayath ward has got two Anganwadies normally. Since the area of operation of the Anganwadi is limited to compact and small area, the Anganwadi Workers are in a position to keep close contact with the house holds living in their area of operation. Hence they are in a position to collect reliable data of Maternal and Infant Death. During inspection of the works also this could be established. In urban area (Municipalities and City Corporation) JPHNs are doing this job. They are also in frequent contact with the households in their area of operation and hence they are also in a position to collect data showing ground realities.

We have also made an attempt to visit the households where maternal and Infant deaths were reported. No discrepancy of the reported data was seen in this occasion also.

Because of the above said reasons the reliability of the collected data on Maternal Mortality Rate and Infant Mortality Rate is confirmed.

TABLE 1 (A)

DISTRICT WISE PARTICULARS OF MATERNAL AND INFANT DEATHS

District: Kollam

Sl No	Item	Period			
		April '03 To March '04		April '04 To March '05	
		Women within age group 15-49	All age groups	Women within age group 15-49	All age groups
1	Number of married couples staying in the district	404714	627235	419651	638333
2	(a) Number of deliveries taken place to the women staying in the district	31320	31322	29743	29745
	(b) Number of deliveries that were attended by skilled health personnel	30912	30914	29305	29306
3	Number of children born alive				
	(a) Male	16184	16184	15231	15232
	(b) (Female	15071	15074	14474	14476
	Total	31255	31258	29705	29708
4	Number of children born dead (or still birth)				
	(a) Male	59	59	59	59
	(b) Female	33	33	44	44
	Total	92	92	103	103
5	Number of women who died due to problems related to child birth				
	(a) During pregnancy period	5	5	2	2
	(b) At the time of child birth	7	7	1	1
	(c) After child birth within 42 days	9	9	5	5
	Total	21	21	8	8
6	Number of children who died before reaching the age of one year				
	(a) Male		82		103
	(b) Female		62		93
	Total		144		196
7	(a) Number of 1-year old children in the district		30335		31178
	(b) Number of 1-year old children who have received at least one dose of measles vaccine		28437		28835

TABLE 1 (B)

DISTRICT WISE PARTICULARS OF MATERNAL AND INFANT DEATHS

District: Palakkad

SI No	Item	Period			
		April '03 To March '04		April '04 To March '05	
		Women within age group 15-49	All age groups	Women within age group 15-49	All age groups
1	Number of married couples staying in the district	396844	568367	414717	593156
2	(a) Number of deliveries taken place to the women staying in the district	37687	37689	36435	36442
	(b) Number of deliveries that were attended by skilled health personnel	37396	37396	36122	36124
3	Number of children born alive				
	(a) Male	19175	19175	18590	18597
	(b) (Female	18407	18409	17705	17705
	Total	37582	37584	36295	36302
4	Number of children born dead (or still birth)				
	(a) Male	107	107	110	110
	(b) Female	60	60	61	61
	Total	167	167	171	171
5	Number of women who died due to problems related to child birth				
	(a) During pregnancy period	2	2	3	3
	(b) At the time of child birth	7	7	4	4
	(c) After child birth within 42 days	8	8	6	6
	Total	17	17	13	13
6	Number of children who died before reaching the age of one year				
	(a) Male		137		155
	(b) Female		86		110
	Total		223		265
7	(a) Number of 1-year old children in the district		36126		37252
	(b) Number of 1-year old children who have received at least one dose of measles vaccine		32460		31567

TABLE 2 (A)

DISTRICT WISE NUMBER OF DEATHS OF WOMEN BEFORE DELIVERY BY CAUSES

District: Kollam

Sl No	Cause of Death	Period			
		April '03 To March '04		April '04 To March '05	
		Women within age group 15- 49	All age groups	Women within age group 15- 49	All age groups
1	Hypertensive Pregnancy	1	1		
2	Other maternal disorders related to pregnancy	1	1		
3	Vomiting Diabetes, hemorage	1	1		
4	Brain problems, Menenchites	2	2		
5	Cancer			1	1
6	Suicide			1	1
Total		5	5	2	2

TABLE 2 (B)

DISTRICT WISE NUMBER OF DEATHS OF WOMEN BEFORE DELIVERY BY CAUSES

District : Palakkad

Sl No	Cause of Death	Period			
		April '03 To March '04		April '04 To March '05	
		Women within age group 15- 49	All age groups	Women within age group 15- 49	All age groups
1	Hypertensive Pregnancy			2	2
2	Related to caesarian	1	1		
3	T.B			1	1
4	Cancer			1	1
Total		2	2	3	3

TABLE 3(A)

DISTRICT WISE NUMBER OF DEATHS OF WOMEN AT THE TIME OF DELIVERY BY CAUSES

District : Kollam

Sl No	Cause of Death	Period			
		April '03 To March '04		April '04 To March '05	
		Women within age group 15- 49	All age groups	Women within age group 15- 49	All age groups
1	Hypertensive Pregnancy	1	1		
2	Bleeding	4	4		
3	Respiratory pneumonia, Digestive problem	1	1		
4	Malnutrition , anemia			1	1
5	Fits	1	1		
Total		7	7	1	1

TABLE 3(B)

DISTRICT WISE NUMBER OF DEATHS OF WOMEN AT THE TIME OF DELIVERY BY CAUSES

District : Palakkad

Sl No	Cause of Death	Period			
		April '03 To March '04		April '04 To March '05	
		Women within age group 15- 49	All age groups	Women within age group 15- 49	All age groups
1	Hypertensive Pregnancy	1	1	1	1
2	Bleeding	3	3	1	1
3	Complication related to labour and deliveries. forceps. other infection.	1	1		
4	Heart problems	1	1		
5	Respiratory pneumonia, , Digestive problem	1	1	1	1
6	Kidney problems	1	1		
Total		7	7	4	4

TABLE 4 (A)

DISTRICT WISE NUMBER OF DEATHS OF WOMEN AFTER DELIVERY WITHIN 42 DAYS BY CAUSES

District : Kollam

Sl No	Cause of Death	Period			
		April '03 To March '04		April '04 To March '05	
		Women within age group 15- 49	All age groups	Women within age group 15- 49	All age groups
1	Hypertensive Pregnancy	2	2		
2	Bleeding	4	4	2	2
3	Heart problems	1	1	1	1
4	Respiratory pneumonia, . Digestive problem			1	1
5	Hepatitis, skin infection, jaundice	1	1		
6	Brain problems, Menenchites			1	1
7	Cancer	1	1		
Total		9	9	5	5

TABLE 4 (B)

DISTRICT WISE NUMBER OF DEATHS OF WOMEN AFTER DELIVERY WITHIN 42 DAYS BY CAUSES

District : Palakkad

Sl No	Cause of Death	Period			
		April '03 To March '04		April '04 To March '05	
		Women within age group 15- 49	All age groups	Women within age group 15- 49	All age groups
1	Other maternal disorders related to pregnancy	1	1		
2	Bleeding	1	1	1	1
3	Heart problems	2	2	2	2
4	Respiratory pneumonia, . Digestive problem	1	1		
5	Brain problems, Menenchites	1	1		
6	Kidney problems	1	1	1	1
7	Fever	1	1		
8	Fits	1	1		
Total		8	8	6	6

TABLE 5 (A)

DISTRICT WISE NUMBER OF DEATHS OF MALE CHILDREN BY CAUSES

District : Kollam

SI No	Cause of Death	Period	
		April '03 To March '04	April '04 To March '05
1	New born Affected by Maternal Conditions, Injections , Paralysis, High B.P	3	2
2	Delivery problem of mother	1	
3	Premature birth	9	13
4	Cancer to mother	1	
5	Low / High weight	1	4
6	Respiratory infection and problem	10	19
7	Pneumonia	4	2
8	Problems related to Heart	31	36
9	Viral & Bacterial infections, Hepatitis , jaundice	2	
10	Tetanus, skin etc	1	
11	Septicemia	2	
12	Clotting of blood	1	1
13	Digestive problems	1	
14	Fever, Temperature/ cold	3	
15	Fits, Brain disease, Epilepsy, convulsion, Menechities	6	7
16	Congenital malformation, abnormalities	6	7
17	Asphyxia	1	
18	Blood group problems	1	
19	Kidney problems	1	2
20	Accidental death	2	
21	Tsunami	4	
22	Siamese Twins	1	
Total		82	103

TABLE 5 (B)

DISTRICT WISE NUMBER OF DEATHS OF MALE CHILDREN BY CAUSES

District : Palakkad

Sl No	Cause of Death	Period	
		April '03 To March '04	April '04 To March '05
1	New born Affected by Maternal Conditions, Injections, Paralysis, High B.P	5	3
2	Pregnancy complications	1	
3	Delivery problem of mother	1	
4	Premature birth	11	16
5	Cancer to mother	1	
6	Low / High weight	8	3
7	Birth injuries, Birth problems	1	2
8	Respiratory infection and problem	30	19
9	Pneumonia	8	5
10	Problems related to Heart	20	28
11	Viral & Bacterial infections, Hepatitis, jaundice	5	3
12	T. B. Malaria, other infections	1	
13	Tetanus, skin etc	1	
14	Septicemia	2	2
15	Blood loss /diseases related to blood	2	2
16	Digestive problems	3	
17	Fever, Temperature/ cold	9	6
18	Fits, Brain disease, Epilepsy, convulsion, Menechities	10	15
19	Congenital malformation abnormalities	11	27
20	Asphyxia	5	6
21	Blood group problems	1	
22	Kidney problems	4	8
23	Not received medical care	3	1
24	Accidental death	1	1
25	Unspecified cause	1	
Total		137	155

TABLE 6 (A)

DISTRICT WISE NUMBER OF DEATHS OF FEMALE CHILDREN BY CAUSES

District : Kollam

Sl No	Cause of Death	Period	
		April '03 To March '04	April '04 To March '05
1	New born Affected by Maternal Conditions, Injections , Paralysis, High B.P	1	6
2	Delivery problem of mother	1	
3	Premature birth	2	10
4	Low / High weight	3	8
5	Respiratory infection and problem	13	15
6	Pneumonia	1	4
7	Problems related to Heart	21	24
8	Viral & Bacterial infections, Hepatitis , jaundice	4	3
9	Blood loss/ Diseases related to blood	1	
10	Digestive problems	1	3
11	Fever, Temperature/ cold	2	
12	Fits, Brain disease, Epilepsy, convulsion, Menechities	4	4
13	Related to spinal cord	1	1
14	Medicinal reaction	1	
15	Congenital malformation, abnormalities	4	6
16	Blood group problems	1	1
17	Kidney problems	1	
18	Blood cancer	2	2
19	Accidental death	1	1
20	Tsunami	2	
Total		62	93

TABLE 6 (B)

DISTRICT WISE NUMBER OF DEATHS OF FEMALE CHILDREN BY CAUSES

District :Palakkad

SI No	Cause of Death	Period	
		April '03 To March '04	April '04 To March '05
1	New born Affected by Maternal Conditions, Injections , Paralysis, High B.P	3	2
2	Delivery problem of mother	1	1
3	Premature birth	6	11
4	Cancer to mother	3	
5	Low / High weight	4	6
6	Respiratory infection and problem	15	21
7	Pneumonia	3	7
8	Problems related to Heart	22	22
9	Viral & Bacterial infections, Hepatitis , jaundice	1	1
10	Septicemia	1	
11	Blood loss/ Diseases related to blood	2	
12	Digestive problems	1	
13	Fever, Temperature/ cold abnormalities	3	
14	Fits, Brain disease, Epilepsy, convention, Menechities	7	1
15	Congenital malformation, abnormalities	9	12
16	Asphyxia	1	17
17	Blood group problems	1	2
18	Kidney problems	3	
19	Not received medical care	2	
20	Blood cancer	2	
21	Accidental death	2	
22	Unspecified cause	1	
Total		86	110

TABLE 7 (A)

DISTRICT WISE NUMBER OF NEW BORN BABIES WHO DIED WITHIN 7 DAYS OF BIRTH BY CAUSES

District : Kollam

Sl No	Cause of Death	Period	
		April '03 To March '04	April '04 To March '05
1	New born Affected by Maternal Conditions, Injections , Paralysis, High B.P	3	5
2	Delivery problem of mother	1	1
3	Premature birth	7	15
4	Cancer to mother	1	
5	Low / High weight	2	9
6	Respiratory infection and problem	8	22
7	Pneumonia	1	3
8	Problems related to Heart	20	31
9	Septicemia	1	
10	Clotting of blood	1	
11	Fever, Temperature/ cold	2	
12	Fits, Brain disease, Epilepsy, convulsion, Menechities	2	2
13	Congenital malformation, abnormalities	4	5
14	Blood group problems	1	1
15	Siamese Twins	1	
Total		53	96

TABLE 7 (B)

DISTRICT WISE NUMBER OF NEW BORN BABIES WHO DIED WITHIN 7 DAYS OF BIRTH BY CAUSES

District : Palakkad

Sl No	Cause of Death	Period	
		April '03 To March '04	April '04 To March '05
1	New born Affected by Maternal Conditions, Injections, Paralysis, High B.P	4	4
2	Pregnancy complications	1	
3	Delivery problem of mother	1	
4	Premature birth	12	15
5	Low / High weight	11	7
6	Birth injuries, Birth problems	1	
7	Respiratory infection and problem	19	29
8	Pneumonia	5	4
9	Problems related to Heart	17	20
10	T. B. Malaria, other infections	1	
11	Septicemia	2	1
12	Blood loss diseases related to blood	2	3
13	Fever, Temperature/ cold	2	
14	Fits, Brain disease, Epilepsy, convulsion, Menechities	6	9
15	Congenital malformation, abnormalities	12	21
16	Asphyxia	6	10
17	Blood group problems	1	
18	Kidney problems	5	4
19	Not received medical care	3	
20	Blood cancer	1	
21	Accidental death	1	1
Total		109	132

TABLE 8 (A)

**DISTRICT WISE NUMBER OF NEW BORN BABIES WHO DIED AFTER 7 DAYS
AND BEFORE 28 DAYS OF BIRTH BY CAUSES**

District : Kollam

Sl No	Cause of Death	Period	
		April '03 To March '04	April '04 To March '05
1	New born Affected by Maternal Conditions, Injections , Paralysis, High B.P	2	
2	Premature birth	1	3
3	Low / High weight	2	
4	Respiratory infection and problem	4	10
5	Problems related to Heart	6	13
6	Viral & Bacterial infections, Hepatitis , jaundice	1	
7	Digestive problems	1	2
8	Fits, Brain disease, Epilepsy, convulsion, Menechities	1	2
9	Medicinal reaction	1	
10	Congenital malformation, abnormalities	1	3
11	Blood cancer	1	
12	Accidental death	1	
Total		16	39

TABLE 8 (B)

**DISTRICT WISE NUMBER OF NEW BORN BABIES WHO DIED AFTER 7 DAYS
AND BEFORE 28 DAYS OF BIRTH BY CAUSES**

District : Palakkad

Sl No	Cause of Death	Period	
		April '03 To March '04	April '04 To March '05
1	New born Affected by Maternal Conditions, Injections , Paralysis, High B.P	2	
2	Premature birth	3	6
3	Cancer to mother	1	
4	Low / High weight	1	2
5	Respiratory infection and problem	11	2
6	Pneumonia	4	
7	Problems related to Heart	10	12
8	Viral & Bacterial infections, Hepatitis , jaundice	2	
9	Tetanus, skin etc	1	
10	Septicemia	1	1
11	Clotting of blood	1	
12	Fits, Brain disease, Epilepsy, convulsion, Menechities	4	5
13	Congenital malformation, abnormalities	2	3
14	Kidney problems	1	2
15	Unspecified cause	1	
Total		35	43

TABLE 9 (A)

DISTRICT WISE NUMBER OF MATERNAL DEATHS

Sector : Rural

Period

Sl No	District	April '03 To March '04		April '04 To March '05	
		Women within age group 15-49	All age groups	Women within age group 15-49	All age groups
1	Kollam	18	18	7	7
2	Palakkad	17	17	12	12
Total		35	35	19	19

TABLE 9 (B)

DISTRICT WISE NUMBER OF MATERNAL DEATHS

Sector : Urban

Sl No	District	April '03 To March '04		April '04 To March '05	
		Women within age group 15-49	All age groups	Women within age group 15-49	All age groups
1	Kollam	3	3	1	1
2	Palakkad			1	1
Total		3	3	2	2

CHAPTER V

FIELD SURVEY OF REPORTED MATERNAL AND INFANT DEATHS

In the course of the survey of the MMR few additional details in a specially designed schedule were also collected. The additional details collected were mainly related to place of birth, i.e. Government hospital, Private hospital and houses, etc. and nature of delivery i.e. Caesarian or normal. The details were collected from the close relatives of the deceased. These additional information enable to compare the cause of death reported by the institutions and the kith and kin of the deceased.

The above details were collected for a period of two years i.e. for the years 2003-04 and 2004-05. The total number of maternal deaths occurred during these period was 59 for the two districts. In 15 cases both mother and baby died. 12 maternal deaths happened during pregnancy i.e. before delivery, 16 occurred at the time of delivery and 31 cases occurred within a few days after delivery.

In the 59 cases reported, 19 were Caesarian. On enquiry about the medical care received by the deceased, it is seen that 16 persons sought medical help from private hospitals and 10 from government hospitals during the pregnancy. At the time of delivery 21 pregnant were admitted in private hospitals and 18 in government hospitals. One of them had her delivery at home under a skilled birth attendant and one had not got any medical attention either from hospital or from any skilled persons.

Even though there were some tribal settlements in the samples selected, we can see that the death rate of mothers and Infants in such areas is not so high. Almost all the births occurred in these area were attended by skilled health persons either in the hospital or in the house. However the lone maternal death reported due to no medical attention was from a tribal settlement.

On enquiry about the cause wise details of the maternal deaths during the above period, it is seen that the majority of the deaths was due to bleeding at the time or after delivery. 12 deaths were reported due to these cause. 7 deaths occurred due to hypertensive pregnancy. The other common causes reported are heart problems, respiratory problem, cancer, etc. Actually 50% of the reported cases occurred during the period of 42 days from delivery were due to some other reasons than puerperal causes such as brain problems, fever, T.B., Cancer, etc.

533 still births were reported during these period.

Out of the 828 Infant deaths reported during these period, 693 happened in hospitals. 67 cases received medical attention in home under skilled or unskilled persons. 68 cases were reported due to no medical attention.

Out of the 828 infant deaths 417 were occurred within 7 days of delivery, 149 cases happened after 7 days and within 28 days from the date of birth and in 262 cases death occurred before the completion of one year.

The major cause reported for infant death is the problems related to heart. 197 such cases were reported. 137 cases reported due to respiratory problems can be cited as the second important cause of infant death. 78 deaths reported are due to premature birth. There are 82 cases of congenital malformation and abnormalities. Few infant death cases reported occurred due to reasons like accidents, cancer, etc. Siamese Twins born during the period and died before one year was also included. 6 infant death reported occurred in Tsunami disaster in Kollam.

In the tribal settlement also much medical care is seen received by the pregnant women. In all cases either medical personnel took care of the patients in their home or the patients were admitted in hospitals before delivery. Here the rate of Infant death reported is a little above compared to other areas.

TABLE 10

DETAILS OF MATERNAL & INFANT DEATHS (2003-04 & 2004-05)

Districts: Kollam & Palakkad

Sl. No.	Age Group	Mothers Died Nos.	Child Died		Both died
			Male	Female	
1	15 - 19	1	31	20	1
2	20 - 24	16	209	122	5
3	25 - 29	18	155	129	6
4	30 - 34	7	51	44	2
5	35 - 39	2	15	25	1
6	40 - 44	0	4	3	0
7	45 - 49	0	1	1	0
Total		44	469	344	15

TABLE 11
NUMBER OF INFANT DEATH BY CAUSES (2003-04 & 2004&05)

Districts: Kollam & Palakkad

Sl. No.	Cause of Death	Nos.
1	New born Affected by Maternal Conditions, Injections ,	38
2	Delivery problem of mother	5
3	Premature birth	78
4	Cancer to mother	4
5	Low / High weight	34
6	Birth injuries, Birth problems	5
7	Respiratory infection and problem	137
8	Pneumonia	30
9	Problems related to Heart	197
10	Viral & Bacterial infections, Hepatitis , jaundice	21
11	T. B. Malaria, other infections	1
12	Tetanus, skin etc	2
13	Septicemia	7
14	Blood loss/ Diseases related to blood	9
15	Digestive problems	10
16	Fever, Temperature/ cold	20
17	Fits, Brain disease, Epilepsy, convulsion, Menechities	64
18	Related to spinal cord	2
19	Medicinal reaction	1
20	Congenital malformation, abnormalities	82
21	Asphyxia	14
22	Blood group problems	6
23	Kidney problems	19
24	Not received medical care	5
25	Blood cancer	7
26	Accidental death	9
27	Tsunami	6
28	Siamese Twins	1
29	Unspecified cause	14
Total		828

TABLE 12

STAGE OF INFANT DEATHS (2003-04 & 2004-05)

Districts: Kollam & Palakkad

Sl. No.	Stage	Nos.
1	Within 7 Days	417
2	After 7 days and within 28 days	149
3	Before completion of one year	262
Total		828

TABLE 13

MEDICAL ATTENTION RECEIVED - INFANT DEATH CASES
(2003-04 & 2004-05)

Districts: Kollam & Palakkad

Sl. No.	Treatment Received	No Medical Attention	In Home Under		Hospital	
			Unskilled Person	Skilled Person	Private	Government
1	For Child (Before Death)	68	13	54	509	604
Total		68	13	54	509	604

TABLE 14

NUMBER OF CAESARIAN DELIVERIES IN INFANT DEATH CASES
(2003-04 & 2004-05)

Sl No	District	Caesarian
1	Kollam	64
2	Palakkad	73
Total		137

TABLE 15
NUMBER OF MATERNAL DEATH BY CAUSES (2003-04 & 2004-05)

Districts: Kollam & Palakkad

Sl. No.	Cause of Death	Nos.
1	Hypertensive Pregnancy	7
2	Other maternal disorders related to pregnancy	2
3	Bleeding	12
4	Complication related to labour and deliveries, forceps.	1
5	Other infection.	1
6	Related to caesarian	1
7	Heart problems	5
8	Diabetes	1
9	Respiratory pneumonia, , Digestive problem	5
10	Malnutrition , anemia	1
11	Brain problems, Menenchites. Fits	4
12	Fever	1
13	T.B	2
14	Cancer	5
15	Others	12
Total		59

TABLE 16

STAGE OF MATERNAL DEATHS (2003-04 & 2004-05)

Districts: Kollam & Palakkad

Sl. No.	Stage	Nos.
1	During Pregnancy	12
2	At the Time of Delivery	16
3	After Delivery	31
Total		59

TABLE 17

NATURE OF DELIVERY IN MATERNAL DEATH CASES

(2003-04 & 2004-05)

Districts: Kollam & Palakkad

Sl. No.	Nature	Nos.
1	Caesarian	19
2	Normal	27
3	Not Reported	13
Total		59

TABLE 18

MEDICAL ATTENTION RECEIVED - MATERNAL DEATH 2003-04 & 2004-05

Districts: Kollam & Palakkad

Sl. NO.	Stage of Death	No Medical Attention	In Home Under	
			Skilled Person	Unskilled Person
1	During Pregnancy Period	0	0	0
2	At the Time of Delivery	0	1	1
3	After the Time of Delivery and Before Death	1	0	0
Total		1	1	1

TABLE 19

CASE OF DEATH IN HOSPITAL 2003-04 & 2004-05

Districts: Kollam & Palakkad

Sl. No.	Person Died	Nos.
1	Mother	41
2	Child	650
3	Both	15
Total		706

Conclusion

The MMR and IMR study reveals some peculiar aspects of the health standards attained in Kerala. Due to high literacy rate, awareness of maintaining good health and factors affecting health, etc. the Keralites, often contact and seek advice of doctors and other health workers as and when they feel discomfort. A good amount of their income is often spent for health related matters. The Government also provides ample health facilities. The private medical institutions are also there with good facilities for helping the patients.

The health statistics of different states show that Kerala stands first with public health facilities and stands last with MMR and IMR.

The reporting system, though not complete, is also better compared to other states of India. The reporting system in rural areas is more systematic than in the urban areas. The Anganwadi network and JPHN personnel could give more or less reliable information in the rural areas while in the urban areas, where the Anganwadi network is not so systematic, the reporting system is not to the desired level.

On detailed enquiry it was found that some of the maternal deaths reported are not due to causes related to pregnancy, delivery or other causes related to puerperium. The death occurred within the period of pregnancy or delivery or post delivery (within 42 days) due to causes like cancer, respiratory diseases, etc. are also included in MMR. Similar causes are found in IMR also. If these causes are not taken into account, the MMR and IMR of Kerala would be much lesser than the one calculated at present.

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the success of any business and for the protection of the interests of all parties involved. The document also highlights the need for transparency and accountability in all financial dealings.

The second part of the document provides a detailed overview of the company's financial performance over the past year. It includes a comprehensive analysis of the company's revenue, expenses, and profit margins. The document also discusses the company's financial position and its ability to meet its obligations to its creditors and shareholders.

The third part of the document outlines the company's financial strategy for the coming year. It includes a detailed budget and a plan for how the company will manage its finances to achieve its long-term goals. The document also discusses the company's plans for expanding its operations and increasing its market share.

Item	Amount
Revenue	1000000
Expenses	800000
Profit	200000

