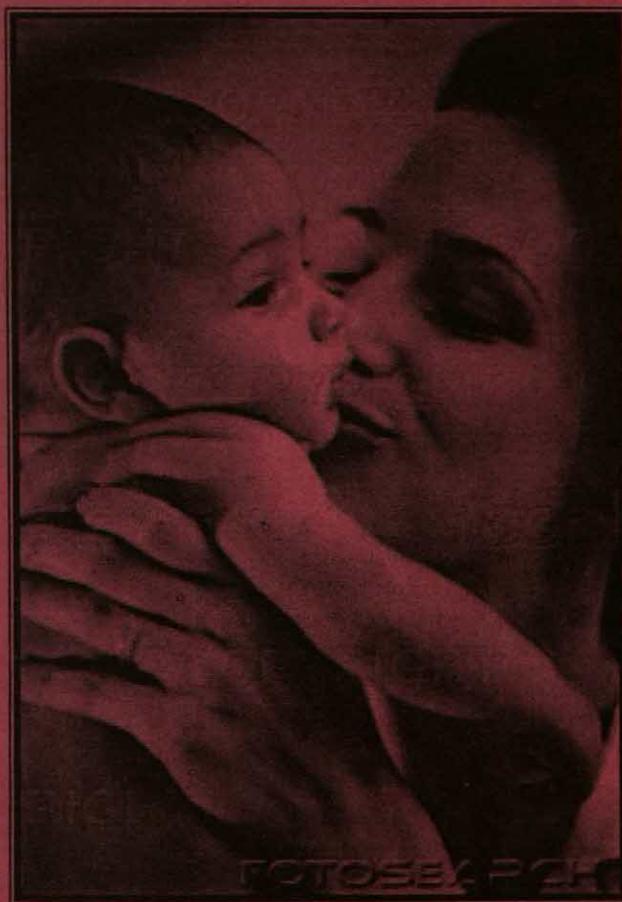


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## GOVERNMENT OF KERALA



# RESIDENTIAL VITAL RATES 2004

Directorate of Economics & Statistics  
Thituvananthapuram  
2007



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GOVERNMENT OF KERALA

**RESIDENTIAL VITAL RATES**

**2004**

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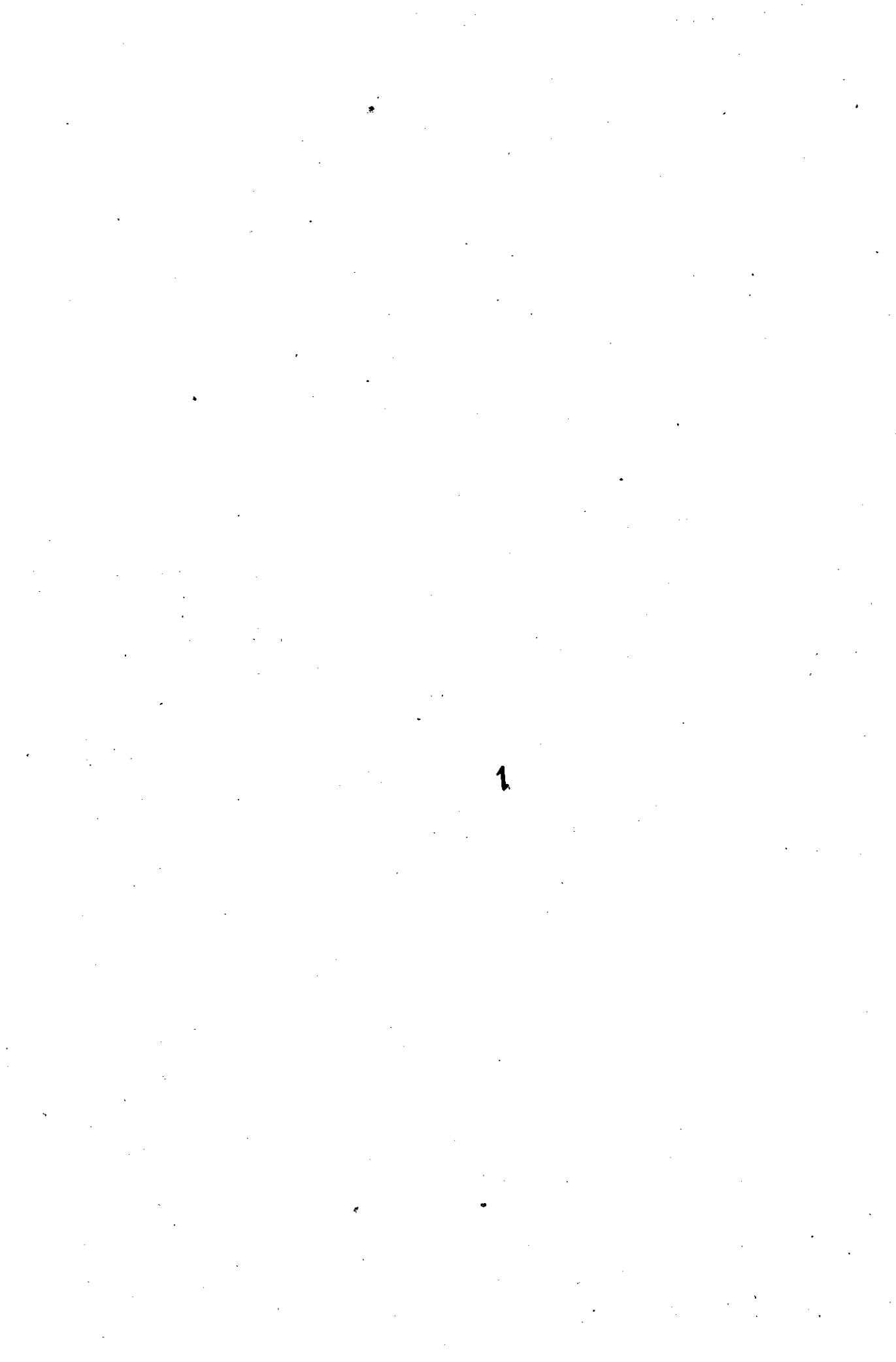


## PREFACE

This report presents the adjusted vital rates of births and deaths of the selected Municipalities and Corporations for the year 2004. The rates have been estimated from the registered births and deaths of the normal residents after making adjustments for under registration and for the same occurring outside the Municipal/Corporation areas, using the results of spot check survey conducted in the above places. Details of twenty-nine Municipalities and four Corporations are included in this report. Details of Thrissur Corporation are not included in this report due to non-availability of data in time. The vital statistics unit of the Department of Economics and Statistics has prepared the report under the supervision of Sri. D Rajan, Additional Director, Smt. Leelamony.S, Deputy Director Smt. Shylamma, Assistant Director and Smt. M.Kannambal, Research Assistant have contributed substantially in bringing out the report.

**Thiruvananthapuram,**  
**Date: 06-09-2007.**

**M.R.Balakrishnan**  
**DIRECTOR**



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## **RESIDENTIAL VITAL RATES 2004**

### **Introduction**

The Civil Registration System was introduced in India under the Births and Deaths Registration Act charted by parliament in 1969. The Act stipulates that every event should be registered in the respective registration units (local self Government) based on the place of occurrence. As per the existing rule every event should be registered within 21 days from the date of its occurrence. Even though the Act stipulates both fine and punishment, non-registration of events exists to a certain extent. In order to ward off such inaccuracies, a corrective measure is devised viz the spot-check survey. More over the Act stipulates that registration is to be done out in the place of occurrence of the event. This may not provide a true picture. The present set up of spot check survey is to tide over that.

One of the important classifications in population data is the rural-urban breakup. In Kerala the number of vital events happening in urban areas is always higher than that in the rural areas. It shows that the rate of registration of vital events in urban areas is always higher than that in the rural area. Modern health facilities are generally available in the urban areas. Rural people, because of their knowledge on health activities and access to such facilities usually resort to urban areas to avail such facilities. Usually the under registration in rural areas is higher than that in urban areas especially in the case of deaths. This is because, most of the deaths in rural areas happened in the house and the people are not interested to register deaths due to the unawareness about the importance of registration. Another important fact is that both rural and urban population tends to hide incidence of suicide and illicit termination of pregnancy. Similarly, there exists gross under registration of vital events such as Infant deaths and Stillbirths in the State.

## **Objectives of the survey**

1. To estimate the extent of under registration of vital events in the selected Municipalities/Corporations and to work out the actual vital rates in these areas.
2. To estimate the residential vital rates of these Municipalities/Corporations
3. To find out the major diseases that lead to deaths in the selected urban areas of the state

## **Coverage of the survey**

The scheme is designed to strengthen the Vital Statistics in the selected Municipalities and corporations. It is implemented in five Corporations and twenty-nine Municipalities in the State. The fieldwork pertaining to the survey was carried out in all centers except Thrissur Corporation. For conducting fieldwork of the survey fifteen wards have been randomly selected from each unit except Alappuzha Municipality. 25 wards have been selected from Alappuzha Municipality. The statistical staff posted in the Municipalities/Corporations have visited all houses of the selected wards and collected the required data in the prescribed schedules.

## **Limitations of the survey**

The most striking limitation of the survey is that the numbers of wards covered are very small. One of the main objectives of the survey is to find out the under registration of vital events. However, the data derived from the survey is partial. In order to obtain a total picture of the rate of under -registration in urban areas, the remaining urban areas of the state should also be brought under the purview of the survey. If this survey is extended to rural areas, a comparative study between urban and rural level of under registration could also be made possible. Similarly the State level under registration can be estimated only if this survey is further extended to rural areas and the remaining Municipalities of the State.

## **Findings of the Survey**

### **Table 1**

This table provides the estimated midyear population of the selected Municipalities and Corporations. It is obvious from the table that the population of all Municipalities/Corporations shows an increasing trend. Out of 34 selected centers, the highest midyear population is recorded in Thiruvananthapuram Corporation and the lowest in Guruvayur municipality. Among municipalities, the highest is in Alappuzha.

### **Table2**

This table presents the number of Educational Institutions both in the government and private sector existing in these municipalities/corporations. Among all centers, Thiruvananthapuram corporation has the maximum number of institutions in almost all categories namely, primary, upper primary, high schools, colleges etc. The total number of institutions in Thiruvananthapuram Corporation is 245. It is followed by Cochin Corporation with 205 numbers. In the case of municipalities, the highest number of institution 53 is recorded in 3 centers namely Alappuzha, Kayamkulam and Vadakara municipalities

### **Table 3**

This table shows the number of hospitals and other facilities both in the public and private sector existing in these Municipalities/Corporations. Number of hospitals in the private sector is higher than that in the Government sector. Among all centers, Thiruvananthapuram Corporation has the highest number of government hospitals, 19 followed by Cochin Corporation with 18. In the case of Municipalities Alappuzha has the highest number of government hospitals. Considering the bed strength in government hospitals Thiruvananthapuram

Corporation stood first with 7077 numbers followed by Kozhikkode Corporation with 3769. In the case of private hospitals the maximum number of hospitals is recorded in Cochin Corporation with 70 followed by Thiruvananthapuram with 47.

In the case of government dispensaries and other institutions it is the highest in Thiruvananthapuram Corporation with 21 followed by Kozhikkode Corporation with 16. Considering the strength of private dispensaries and other institutions, Alappuzha municipality stood first with 127 followed by Kozhikkode Corporation and vadakara municipality with 99 and 97 numbers respectively.

The number of maternity and child health centers in public sector was highest in Kozhikkode Corporation with 24 followed by 14 in Cochin Corporation. In the private sector such facilities do not exist anywhere else in the entire state except in Thiruvananthapuram Corporation

#### Table 4

This table furnishes the details regarding the number of registration units, area and population of the selected centers. Thiruvananthapuram Corporation has the largest 141.71 sq. km among the corporation followed by Kochi Corporation with 94.88 sq. km. When municipalities are taken into consideration Alappuzha covers the largest area 46.77 sq. km followed by Punalur municipality with 34.60 sq. km. Considering the density of population the highest is recorded in Kollam Corporation, i.e. 6512 /sq. km. followed by Kochi Corporation with 6392/sq.km. In the case of Municipality, it is the highest in Kannur with 5924/ sq. km. and lowest is in Punalur Municipality with 1375/sq.km.

#### Table 5

This table reveals Cochin Corporation stood first with 8 municipal burial grounds followed by Palakkad municipality and Thiruvananthapuram Corporation. Cochin Corporation has the highest number of private burial grounds i.e. 40 followed by Kollam Corporation with 37.

### **Table 6**

This table given the total number of vital events and the number of vital events of the usual residents registered in their respective centers. During the year under report 39074 live births, which is the highest is registered in Thiruvananthapuram Corporation out of which 5683 events were pertaining to the usual residents. Kozhikkode Corporation stood in the second place with 38929 live births. In the case of municipalities the highest number 13174 was recorded in Palakkad municipality and the lowest 200 in Chittor Thathamangalam municipality.

The maximum number of stillbirths 633 was registered in Kozhikkode Corporation of which 68 events were pertained to the usual residents. Thiruvananthapuram Corporation stood in the second place with 395.

In the case of infant deaths, the highest number 900 was recorded in Kozhikkode Corporation out of which 528 are male and 372 are female and infant death corresponds to normal residents were 276. The Thiruvananthapuram Corporation stood at the second place with 616 numbers. In the case of Municipalities the highest 127 was registered in Palakkad municipality. The table reveals that no infant death was registered in Attingal, Cherthala, and Vaikam municipalities during the year under report

The number of deaths 11771 registered in Thiruvananthapuram Corporation was highest in the state followed by Kozhikkode Corporation with 9053. In the case of municipality it was the highest in Alappuzha municipality with 2681 numbers and the lowest 109 in Guruvayoor municipality.

### **Table No.7**

This table reveals that the major causes of death were respiratory disease, cancer, heart failure, pulmonary diseases diabetes, tuberculosis and others. No specific causes of death have been reported from 6 municipalities and Kollam Corporation.

### **Table No.8**

This table shows the results of spot check survey of the selected registration units. The data reveals that all live births events expect one case each in Punalur, Kayamkulam, and Palakkad municipalities were registered in the respective registration units. Out of 31 infant death enumerates 30 were registered cases

In the case of deaths, all enumerated deaths had been registered in all centers except Thiruvananthapuram and Kozhikkode corporations, Punalur, Kayamkulam, Alappuzha, Mavelikkara, Changanasserry, Muvattupuzha, Aluva, Chalakkudy, Guruvayur, Malappuram, Vadakara, Thalassery and Kannur Municipalities. The survey results shows that out of the death cases most of the cases were occurred within the station.

### **Table 9**

This table gives the percentage of under registration and the percentage of outside events in the selected units. With regarding to the registration of births, cent percent was recorded in all most all centers except in Punalur, Kayamkulam, and Palakkad municipalities. In the case of deaths, cent percent registration was reported from 16 centers and under registration was from the remaining centers. The highest percentage of under registration of death 22.80% was reported from Guruvayoor municipality and the lowest 0.86% in Thalassery municipality

The table reveals that percentage of outside events of births was the highest in Chittur Thathamangalam Municipality, with 95.54% and lowest in Thalassery municipality 4.30%. In the case of deaths, the highest percentage 64.20 was recorded in Kottayam municipality followed by Guruvayoor municipality with 42.42% and lowest 0.35% in Kochi Corporation

### **Table No.10**

This table shows that the registered vital rates and Adjusted Residential vital rates in the Municipalities and Corporations.

It is seen from data that highest birth rate 30.12% is recorded in Thalassery municipality followed by Cochin corporation with 19.58% and the lowest in Chittur Thathamangalam with 0.49%. In terms of registered death rate, it is the highest in

Cochin Corporation 8.14% followed by Alappuzha municipality with 6.77% and the lowest in Malappuram municipality 1.44%.

The table reveals that in the case of the adjusted residential vital rates of Births highest rate 31.48% was reported from Thalassery municipality followed by Neyyattinkara Municipality with 30.04% and the lowest 5.02% in Kottayam municipality. As regards death the adjusted residential vital rates is the highest i.e. 8.71% in Thiruvalla Municipality followed by Punalur Municipality with 8.63% and the lowest 1.44% is in Malappuram municipality.

### **Conclusion**

The survey result reveals that under registration of birth events and death events still exists in the urban areas of the State. Hence cent percentage registration could not be achieved during the year under report also. Lack of awareness about the need and importance of registration of events may be the reasons for the same. Spot-check Survey helps to find out the unregistered events and thereby the concerned authorities can take necessary steps to minimize the extent of under registration.

**Table 1 - Estimated Mid-year Population of Municipalities and Corporations: 2004 (as on 1st July)**

Sl. No.	Municipality/ Corporation	2001 Census Population	Population as on 2004 1 <sup>st</sup> July
1	Neyyattinkara	69467	71726
2	Thiruvananthapuram Corporation	744983	769198
3	Attingal	35693	36775
4	Kollam Corporation	361560	370340
5	Punalur	47235	47558
6	Kayamkulam	68585	69068
7	Mavelikkara	28439	28486
8	Alappuzha	177029	177822
9	Cherthala	45105	45715
10	Thiruvalla	56837	57540
11	Changanacherry	51967	53229
12	Kottayam	60728	62196
13	Palai	22640	23189
14	Vaikom	22641	23190
15	Muvattupuzha	29246	29816
16	Kochi Corporation	595575	606282
17	Aluva	24110	24892

Table 1 Contd.

Sl. No.	Municipality/ Corporation	2001 Census Population	Population as on 2004 1st July
18	Paravur	30059	30812
19	Perumbavoor	26547	27204
20	Irinjalakkuda	28873	29350
21	Kodungallur	33539	34339
22	Chalakkudy	48380	49538
23	Thriissur corpn.	317526	326539
24	Guruvayoor	21186	21520
25	Kunnamkulam	51592	53057
26	Palakkad	130767	133360
27	Chittoor-Thathamangalam	31886	32921
28	Thirur	53654	55133
29	Malappuram	58491	61759
30	Kozhikkode Corpn.	436556	442283
31	Vadakara	75847	77020
32	Thalasserry	99387	103440
33	Kannur	63797	65345
34	Kasaragod	52634	53498

**Table-2, Number Of Educational Institutions-2004**

Sl.No	Municipality/Corporation	Lower Primary School			Upper PrimarySchool			High Schools			VHSC/HSS			Colleges			Grand Total			
		Govt.	Pvt.	Total	Govt.	Pvt.	Total	Govt.	Pvt.	Total	Govt.	Pvt.	Total	General	Technical	Pvt.	Total			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Neyyattinkara	5	7	12	4	3	7	4	3	7	-	-	-	-	-	-	1	2	3	29
2	Thiruvanthapuram	42	19	61	24	14	38	30	33	63	18	18	36	5	4	9	11	27	38	245
3	Attingal	4	4	8	3	3	6	1	4	5	3	-	3	1	-	1	4	-	4	27
4	Kollam Corpn.	7	35	42	4	8	12	4	4	8	13	10	23	-	3	3	4	33	37	125
5	Punalur	7	6	13	2	4	6	-	3	3	1	6	7	-	1	1	10	11	41	
6	Kayamkulam	7	9	16	3	5	8	-	14	14	3	4	7	-	1	1	2	5	7	53
7	Mavelikkara	2	7	9	2	4	6	3	3	6	2	2	4	1	-	1	3	3	6	32
8	Alappuzha	8	14	22	3	3	6	4	16	20	--	--	--	-	2	2	-	3	3	53
9	Cherthala	3	1	4	1	1	2	2	2	4	-	-	-	1	-	1	1	-	1	12
10	Thiruvalla	4	15	19	4	6	10	2	9	11	-	7	7	-	1	1	-	1	1	49
11	Changanassery	7	12	19	3	7	10	2	6	8	1	5	6	-	3	3	-	3	3	49
12	Kottayam	2	17	19	3	2	5	2	12	14	-	-	-	-	3	3	2	4	6	47
13	Palai	3	3	6	-	3	3	-	-	1	4	5	-	-	-	2	21	23	37	
14	Valkom	3	5	8	2	5	7	3	4	7	-	-	-	-	-	1	-	1	23	
15	Muvattupuzha	2	6	8	3	3	6	3	5	8	-	-	-	1	1	2	-	2	2	26
16	Cochi Corppn	15	55	70	6	22	28	16	12	28	-	-	-	2	8	10	1	68	69	205
17	Aluva	3	4	7	-	2	2	5	7	-	-	-	-	2	2	-	-	-	18	

Table-2 Contd

Sl.No	Municipality/Corporation	Primary School			Upper Primary Schools			High Schools			VHSC/HSS			Colleges			Grand Total			
		Govt.	Pvt.	Total	Govt.	Pvt.	Total	Govt.	Pvt.	Total	Govt.	Pvt.	Total	Govt.	Pvt.	Total				
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
18	N Paravur	4	4	8	1	2	3	-	2	2	2	2	4	-	3	3	-	8	8	28
19	Perubavur	3	6	9	1	1	3	3	6	3	3	3	6	1	1	1	1	1	1	23
20	Irinjalakuda	2	8	10	2	9	11	2	6	8	2	5	7	2	2	2	2	5	5	43
21	Kodugallur	3	4	7	1	1	2	2	2	2	-	2	1	2	3	2	3	2	2	17
22	Chalakkudy	3	2	5	1	1	3	3	6	1	1	2	1	1	2	4	2	2	6	22
23	Thrissur Corp.																			
24	Guruvayoor				1	1	2	1	2	3	1	1	2	1	1	1	1	1	1	8
25	Kunnamkulam	2	10	12	1	3	4	5	2	7	3	2	5	1	1	1	1	1	1	31
26	Palakkad	13	9	22	6	8	14	1	1	2	3	1	4	1	1	2	1	1	1	45
27	Chittur-Thathramangalam	3	1	4	3	3	6	3	3	6	4	1	5	1	1	1	1	-	1	23
28	Thirur	3	17	20	1	7	8	2	5	7				2	2	2	2	2	2	8
29	Malappuram	5	9	14	1	3	4	2	8	10				1	1	-3	12	15	44	
30	Kozhikode-Corpn.	23	35	58	15	26	41	10	21	31	13	20	33	2	4	6	11	10	21	190
31	Vaddakara	27	27	-	11	11	3	4	7	2	2	4			4	4	4	4	4	53
32	Thalassery	4	32	36	4	12	16	6	7	13				20	20	1	4	5	90	
33	Kannur	4	2	6	6	5	11	4	3	7				3	-	3	3	3	27	
34	Kasaragod	6	6	12	4	4	8	4	1	5				1	1	1	1	1	27	

**Table 3 - Number of Hospitals and other Institutions 2004**

Sl. No.	Municipality/ Corporation	Hospitals				Dispensaries & other Institutions				Maternity & Child Health Center			
		Public No.	Beds No.	Private No.	Total Beds	Public No.	Bed s	Private No.	Bed s	Beds No.	Bed s	Public No.	Bed s
1	2	3	4	5	6	7	8	9	10	11	12	13	14
1	Neyyattinkara	5	436	8	280	10	716	1	-	11	-	12	-
2	Thiruvanantha- puram corpn.	19	7077	47	2097	66	9174	21	-	57	-	78	-
3	Attingal	2	84	8	450	10	534	3	-	23	-	26	-
4	Kollam corpn.	9	1485	33	1895	42	3380	11	-	92	-	103	-
5	Punalur	2	169	13	286	15	455	2	-	18	-	20	-
6	Kayamkulam	4	280	13	525	17	805	-	-	30	-	30	-
7	Mayyilkkara	2	267	7	315	9	582	-	-	10	-	10	-
8	Alappuzha	8	1780	8	140	16	1920	2	-	127	-	129	-
9	Cherthala	3	286	3	473	6	759	-	-	36	-	36	-
10	Thiruvalla	3	200	6	1250	9	1450	-	-	15	-	15	-
11	Changanacherry	2	214	13	205	15	419	-	-	38	-	38	-
12	Kottayam	4	503	12	1009	16	1512	-	-	-	-	-	-
13	Palai	3	194	11	575	14	769	1	-	30	-	31	-
14	Valkom	1	275	1	52	2	327	1	24	25	-	26	1
15	Muvattupuzha	3	298	11	510	14	808	1	-	36	-	37	-
16	Kochi	18	2012	70	5215	88	7227	6	-	84	-	90	-
17	Aluva	2	237	10	720	12	957	-	-	34	-	34	-

**Table 3 (Contd..)**

Sl. No.	Municipality/ Corporation	Hospitals			Dispensaries & other Institutions			Maternity & Child Health Centre				
		Public		Private	Total	Public		Private	Total	Public		Total
		No.	Bed s	No.	Bed s	No.	Bed s	No.	Bed s	No.	Bed s	No.
1	2	3	4	5	6	7	8	9	10	11	12	13
16	Paravur	3	189	8	436	11	625	10	-	15	-	25
17	Perumbavoor	2	232	6	468	8	700	1	-	24	-	25
18	Irinjalakuda	2	236	5	124	7	360	3	-	5	-	8
19	Kodungallur	2	158	6	358	8	516	-	-	32	-	32
20	Chalakudy	1	144	10	716	11	860	2	-	25	-	27
21	Thrissur corp.								-	3	-	3
22	Guruvayur	1	30	5	184	6	214	-	-	-	-	-
23	Kunnamkulam	1	124	5	565	6	689	3	-	3	-	5
24	Palakkad	4	739	21	612	25	1351	4	-	15	-	19
25	Chittoor- Thathamangalam	2	128	1	10	3	138	-	15	6	15	6
26	Thirur	7	199	10	350	17	549	6	-	6	-	3
27	Malappuram	4	187	5	486	9	673	1	-	27	-	28
28	Kozhikode Corpor.	7	3769	33	2048	40	5817	16	-	99	-	115
29	Vadakara	2	240	14	520	16	760	1	-	97	-	98
30	Thalassery	2	556	23	839	25	1395	3	-	14	-	17
31	Kannur	2	125	29	773	31	898	1	16	-	1	16
32	Kasaragod	2	236	11	540	13	776	1	-	22	-	23

**Table 4- Registration units with Area and Population 2004**

SL no	Municipality \Corporation	No of Reg units	Area in sq\km	Area Per Reg units	Mid year population	Population per Reg units	Densitry per Sq km
1	2	5	6	7	8	9	10
1	Neyyattinkara	1	28.78	28.78	71726	71726	2492
2	Thiruvananthapuram	20	141.71	7.09	769198	38460	5428
3	Attingal	1	14.775	14.775	36775	36775	2489
4	Kollam	1	57.28	57.28	373016	373016	6512
5	Punalur	1	34.60	34.60	47558	47558	1375
6	Kayamkulam	1	21.79	21.79	69068	69068	3170
7	Mavelikara	1	12.65	12.65	28486	28486	2252
8	Alappuzha	2	46.77	23.38	177822	88911	3802
9	Cherthala	1	16.18	16.18	45715	45715	2825
10	Thiruvalla	1	27.52	27.52	57540	57540	2091
11	Changanacherry	1	13.50	13.50	53229	53229	3943
12	Kottayam	2	16.45	8.22	62196	31098	3782
13	Palai	1	16.06	16.06	23189	23189	1444
14	Vaikom	1	8.73	8.73	23190	23190	2656
15	Muvattupuzha	1	13.18	13.18	29816	29816	2262
16	Kochi Corporation	2	94.88	47.43	606282	303141	6392
17	Aluva	1	7.18	7.18	24892	24892	3467
18	Paravur	1	9.02	9.02	30812	30812	3416
19	Perumbavoor	1	13.61	13.61	27204	27204	1999
20	Irrinjalakuda	1	11.24	11.24	29350	29350	2611
21	Kodungallur	1	17.40	17.40	34339	34339	1974
22	Chalakudy	1	25.23	25.23	49538	49538	1963
23	Thrissur				326539		
24	Guruvayoor	1	7.47	7.47	21520	21520	2878
25	Kunnamkulam	1	34.18	34.18	53057	53057	1552
26	Palakkad	1	26.60	26.60	133360	133360	5013
27	Chittoor- Thathamangalam	1	14.71	14.71	32921	32921	2238
28	Thirur	1	16.55	16.55	55133	55133	3331
29	Malappuram	1	33.69	33.69	61759	61759	1833
30	Kozhikode Corp.	14	84.28	6.02	442283	31592	5248
31	Vadakara	1	21.34	21.34	77020	77020	3609
32	Thalasserry	3	23.98	7.99	103440	34480	4313
33	Kannur	1	11.03	11.03	65345	65345	5924
34	Kasaragod	1	16.69	16.69	53498	53498	3205

**Table 5 - Number of Burial Grounds, Cremation Grounds and Civil Registration Units**

Sl. No	Municipality/ Corporation	Burial Grounds			Cremation Grounds			Total no. of Registration units	
		Mun/ Corp	Private	Total	Mun/ Corp..	Private	Total	No. of wards	No. of units
1	2	3	4	5	6	7	8	9	10
1	Neyyattinkara	1	4	5	-	3	3	37	1
2	Thiruvananthapuram	4	30	34	1	3	4	81	20
3	Attingal	1	1	2	-	5	5	24	1
4	Kollam	2	37	39	2	1	3	52	1
5	Punalur	1	20	21	-	-	-	30	1
6	Kayamkulam							38	1
7	Mavelikara	1	9	10	-	1	1	23	1
8	Alappuzha	3	2	5	-	19	19	50	2
9	Cherthala	-	5	5	1	4	5	28	1
10	Thiruvalla	1	1	2	1	-	1	32	1
11	Changanacherry	1	12	13	-	1	1	32	1
12	Kottayam	1	15	16	1	2	3	38	1
13	Palai	1	6	7	1	-	1	23	1
14	Vaikom				1		1	20	1
15	Muvattupuzha	1	8	9	-	-	-	25	1
16	Kochi Corporation	8	40	48	5	11	16	66	2
17	Aluva	-	7	7	-	3	3	21	1
18	N.Paravur	1	5	6	-	1	1	23	1
19	Perumbavoor	1	8	9	-	1	1	21	1
20	Irrinjalakuda	1	5	6	-			22	1
21	Kodungallur	-	2	2	1	1	2	24	1
22	Chalakudy	2	8	10	-	1	1	28	1
23	Thrissur								
24	Guruvayoor	1	4	5	1	1	2	15	1
25	Kunnamkulam	2	11	13	-	-	-	31	1
26	Palakkad	4	7	11	3	1	4	50	1
27	Chittoor- Thathamangalam	-	-	-	3	-	3	21	1
28	Thirur	2		2				28	1
29	Malappuram	1	10	11	-	1	1	24	1
30	Kozhikode Corpor.	2	9	11	5	1	6	39	14
31	Vadakara	1	8	9	-	-	-	40	1
32	Thalasserry	1	15	16	1	11	12	50	3
33	Kannur	1	13	14	1	-	1	38	1
34	Kasaragod	-	12	12	2	1	3	32	1

**Table 6 - Vital events registered during the year 2004**

Sl. No	Municipality/ Corporation	Live Births						Still Births								
		Total Events			Events to normal residents			Total Events Events to normal residents			Male					
		Male	Female	Total	Male	Female	%	Total	%	Male	Female	Total	Male			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Neyyattinkara	372	332	704	129	34.67		124	37.34	253	35.94	-	-	-	-	-
2	Thiruvananthapuram	20033	19041	39074	2952	14.73		2731	14.34	5683	14.54	219	176	395	-	-
3	Attingal	735	695	1430	87	11.84		82	11.79	169	11.82	4	2	6	-	-
4	Kollam	7518	6993	14511	4729	62.90		2264	32.38	6993	48.19	33	28	61	10	12
5	Punalur	2044	1887	3931	201	9.83		227	12.02	428	10.89	8	5	13	-	-
6	Kayamkulam	2528	2475	5003	458	18.11		515	20.80	973	19.45	3	3	6	1	1
7	Mavelikara	1687	1554	3235	119	7.05		127	8.17	246	7.60	-	-	-	-	-
8	Alappuzha	5969	5527	11496	1176	19.70		1103	19.95	2279	19.82	97	60	157	18	11
9	Cherthala	1414	1522	2936	99	7.00		119	7.82	218	7.43	4	3	7	2	2
10	Thriuvalla	2401	2357	4758	238	9.91		205	8.70	443	9.31	12	13	25	2	2
11	Changanacherry	1121	1021	2142	172	15.34		216	21.15	388	18.11	2	-	2	1	1
12	Kottayam	1771	1291	3026	82	4.63		72	5.58	154	5.09	3	4	7	-	-
13	Palai	-	-	2950	65	-		68	-	133	4.51	-	-	16	-	-
14	Vaikom	744	769	1513	79	10.62		73	9.49	152	10.05	-	-	-	-	-
15	Muvattupuzha	1606	1607	3213	173	10.77		175	10.89	328	10.21	1	1	2	-	-
16	Kochi Corporation	9437	9087	18622	6042	64.02		5827	64.12	11869	64.08	93	67	160	57	40
17	Aluva	2286	2097	4383	82	3.59		56	2.67	138	3.15	11	9	20	-	-

Table 6 - Contd.

Sl. No	Municipality/ Corporation	Live Births										Still Births					
		Total Events					Events to normal residents					Total Events			Events to normal residents		
		Male	Female	Total	Male	%	Female	%	Total	%	Male	Female	Total	Male	Female	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
18	Paravur	1677	1641	3318	90	5.37	99	6.03	189	5.70	5	6	11	-	-	-	
19	Perumbavoor	1365	1302	2667	89	6.52	98	7.53	187	7.01	4	4	8	-	-	-	
20	Irinjalakuda	912	873	1785	69	7.57	66	7.56	135	7.62	3	3	6	-	1	1	
21	Kodungallur	2704	2506	5210	107	3.96	104	4.15	211	4.05	4	4	8	-	-	-	
22	Guruvayur	119	103	222	6	5.04	8	7.77	14	6.31	1	1	2	-	-	-	
23	Thrissur																
24	Chalakkudy	1960	1793	3753	255	13.01	221	12.33	476	12.68	4	4	8	-	2	2	
25	Kunnamkulam	2209	2083	4292	253	11.45	215	10.32	468	10.90	11	11	22	3	2	5	
26	Palakkad	6807	6367	13174	624	9.17	584	9.17	1208	9.17	22	17	39	7	5	12	
27	Chittoor- Thathamangalam	117	83	200	13	11.11	3	3.61	16	8.00	-	1	1	-	-	-	
28	Thirur	3981	3858	7839	335	8.41	314	8.14	649	8.28	3	7	10	-	1	1	
29	Malappuram	3708	3505	7291	232	6.26	213	6.08	445	6.10	33	32	65	-	1	-	
30	Kozhikode Corporation	20104	18825	38929	2493	12.40	2350	12.48	4843	12.44	340	293	633	38	30	68	
31	Vadakara	1265	1184	2449	237	18.74	194	16.39	431	17.60	4	7	11	2	2	4	
32	Thalasserry	6215	5874	12089	1602	25.78	1509	25.69	3111	25.73	39	30	69	3	2	5	
33	Kannur	3038	3062	6100	375	12.34	343	11.20	718	11.77	12	22	34	-	-	-	
34	Kasaragod	4284	4298	8582	428	9.99	397	9.24	825	9.61	47	53	100	4	4	8	

Table 6cont.

Sl. No	Municipality/ Corporation	Infant Death						Other Deaths						Total Death							
		Total Events			Events to normal residents			Total Events			Events to normal residents			Total Events			Events to normal residents				
		Male	Fem ale	Total	Male	Fem ale	Total	Male	Fem ale	Total	Male	Fem ale	Total	Male	Fem ale	Total	Male	Fem ale	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
1	Neyyattinkara	2	1	3	-	1	1	229	194	423	160	133	293	231	195	426	160	69.26	134	68.72	294
2	Thiruvanantha- puram	343	273	616	-	-	-	6884	4262	11155	1398	1048	2446	7227	4535	11771	1398	19.34	1048	23.11	2446
3	Altingal	-	-	-	-	-	-	119	101	220	75	67	142	119	101	220	75	63.02	67	66.34	142
4	Kollam	41	35	76	11	9	20	1797	1075	2872	995	664	1639	1838	1110	2948	1006	54.73	653	58.83	1659
5	Punalur	2	3	5	-	2	2	266	179	445	154	112	266	268	182	450	154	57.46	114	62.64	268
6	Kayamkulam	3	2	5	-	-	-	273	180	423	172	113	285	276	152	428	172	62.32	113	74.34	285
7	Mavelikara	3	2	5	1	-	1	389	216	605	89	82	171	392	218	610	90	22.96	82	37.61	172
8	Alappuzha	70	54	124	13	7	20	1541	1016	2597	630	553	1183	1611	1070	2681	643	39.91	560	52.34	1203
9	Cherthala	-	-	-	-	-	-	390	375	765	181	111	292	390	375	765	181	46.41	111	29.60	292
10	Thiruvalla	31	24	55	4	-	4	873	454	1327	232	150	382	904	478	1382	236	26.11	150	31.38	386
11	Changan- cherry	1	2	3	-	2	2	216	141	357	131	98	229	217	143	360	131	60.36	100	69.93	231
12	Kottayam	5	7	12	-	-	-	309	267	576	49	46	95	314	274	588	49	15.61	46	16.79	95
13	Palai	-	-	6	-	-	-	-	-	402	-	-	-	-	-	408	56	-	27	-	83
14	Vaikom	-	-	-	-	-	-	191	120	311	27	31	58	191	120	311	27	14.14	31	25.83	58
15	Muvattupuzha	4	5	9	1	1	2	246	167	413	96	72	168	250	172	422	97	38.80	73	42.44	170
16	Kochi Corporation	206	115	321	104	72	176	4360	2405	6765	3115	1645	4760	4566	2520	7086	3219	70.50	1717	68.13	4936
17	Aluva	2	1	3	-	-	-	271	196	467	41	41	82	273	197	470	41	15.02	41	20.81	82
																				17.45	

Table 6 - Contd.

Sl. No	Municipality/ Corporation	Infant Death						Other Deaths						Total Death					
		Total Events			Events to normal residents			Total Events			Events to normal residents			Total Events			Events to normal residents		
		Male Fem ale	Total Male Fem ale	Tot Al	Ma le	Fem ale	Tot al	Ma le	Fem ale	Tot al	Ma le	Fem ale	Tot al	Ma le	Fem ale	Tot al	Ma le	Fem ale	Tot al
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
18	Paravur	5	1	6	-	-	-	285	207	492	61	9	70	290	208	498	61	21.03	9
19	Perumbavoor	4	3	7	-	-	-	199	118	317	62	57	119	203	121	324	62	30.54	57
20	Irinjalakuda	4	3	7	1	1	2	179	138	317	72	90	162	183	141	324	73	39.89	91
21	Kodungallur	5	6	11	1	1	2	210	222	432	58	59	117	215	228	443	59	27.44	60
22	Chalakudy	7	5	12	-	1	1	359	188	547	155	97	252	366	193	559	155	42.35	98
23	Thrissur	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	Guruvayoor	1	1	2	-	-	-	61	46	107	30	29	59	62	47	109	30	48.39	29
25	Kunnamkulam	18	10	.28	3	1	4	305	242	547	165	156	321	323	252	575	168	52.01	157
26	Palakkad	70	57	127	13	12	25	1055	690	1745	324	213	537	1125	747	1872	337	29.96	225
27	Chittoor- Thathamangalam	1	-	1	-	-	-	162	111	273	103	83	186	163	111	274	103	63.19	83
28	Thinur	14	14	28	-	2	2	322	214	536	110	77	187	336	228	564	110	32.74	79
29	Malappuram	19	19	38	4	2	6	277	169	446	42	47	89	296	188	484	46	15.54	49
30	Kozhikode Corporation,	528	372	900	162	114	276	5183	2970	8153	1235	963	2198	5711	3342	9053	1397	21.11	1077
31	Vadakara	8	10	18	4	3	7	453	325	778	252	170	422	461	335	796	256	55.53	173
32	Thalassery	53	43	96	7	8	15	1005	778	1783	300	307	607	1058	821	1879	307	29.02	315
33	Kannur	26	46	62	6	5	11	405	300	705	140	141	281	431	336	767	146	33.87	146
34	Kasaragod	26	24	50	5	2	7	320	327	647	106	88	194	346	351	697	111	32.08	90

**Table 7 - Deaths according to causes 2004**

Sl. No	Municipality/ Corporation	Suicid e	Accid ent	Pneum onia	B.P	T.B	Aids	Tetan us	Diarr hea	Dise ase	Respi ratory & Diseas es	Enter ic Diseas es	Gastr ic Cancer	Enter o ther Dis ease	Pulmo nary Diseas es	Diabe tics	Hy dro pho bia/ Ra bie s	Other rs	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
	<b>Neyattink ara</b>									105			120						201	426	
	<b>Thiruvanant hapuram</b>	169	470	217	107	107	38	26	48	526	166	3	643	503	1907	495	617	13	5716	11771	
1.	Attingal										21			28		95	1	18		57	220
2.	Kollam																		2948		
3.	Punalur																		450		
4.	Kayamkulam																		428		
5.	Mavelikara										2		5	393		327			610		
6.	Alappuzha										36	8	14		105	11			1954	2681	
7.	Cherthala																	473	765		
8.	Thiruvalla	25	37									8	59	233		83			937	1382	
9.	Changanach erry										14		85	16	62	82			101	360	
10.	Kottayam											31			28	9	8		512	588	
11.	Palai														4	15			389	408	
12.	Vaikom	4	12		6	83								8	77		8	113	311		
13.	Muvattupuzha														186			236	422		
14.	Kochi Corpora.	290			59							527						6210	7086		
15.	Aluva										9		25	18	45		2	371	470		

Table 7 (Contd...)

Sl. No	Municipality/ Corporation	Suicid e	Accid ent	Pneu monia	BP	TB	Aids	Teta nus	Dysent ery & Diarr hea	Respir atory & Diseas es	Enteric Disease	Diph theria	Cancer	Gast ro Ente ritis	Heart Failure	Pulmo Nary Diseas es	Dia beti cs	Hyd roph obia /Ra bies	Other s	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
18	Paravur							5						93	286					114	498
19	Perumbavoor													26	131	12				155	324
20	Irinjalakuda													4	26		107			306	443
21	Kodungallur																				324
22	Chalakudy	14	33	9					13	19				31	144	12				284	559
23	Thrissur																				
24	Guruvayoor	17	6	3							9	8		6	41				19	109	
25	Kunnathukulam																			445	575
26	Palakkad																			1772	1872
27	Chittor- Thathamangala m																				274
28	Thirur.		19					2			4		30	49	10	193	7	5		245	564
29	Malappuram																				484
30	Kozhikode Corpo.	211	330	171				8	5	33	554		758		1659	403	260	2	4659	9053	
31	Vadakara															135	159			502	796
32	Thalassery																			1879	
33	Kannur																20	159		485	767
34	Kasaragod																41	39	34	543	697
35	Total																				

**Table 8 - Results of Spot Check Survey - 2004**

Sl. No	Municipality/ Corporation	No. of wards selected	Total no. of House holds	No. of House holds visited	Live Births						No. of events detected to normal residents					
					Enumi- rated	Regis- tered	N.R	occurred outside	Enumi- rated	Regis- tered	N.R	occurred outside	Enumi- rated	Regis- tered	N.R	occurred outside
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1.	Neyattinkara	15	7910	8725	354	41	-	313	2	1	-	1	168	125	-	43
2.	Thiruvanantha- puram	15	45100	22500	703	668	-	35	-	-	-	-	282	267	11	4
3.	Attingal	15	7256	7256	229	73	-	156	-	-	-	-	86	60	-	26
4.	Kollam	15	23843	17491	927	808	-	119	-	-	-	-	348	283	-	65
5.	Punalur	15	6421	6421	281	187	1	93	-	-	-	-	153	100	19	34
6.	Kayamkulam	15	6092	6092	425	293	1	131	-	-	-	-	151	85	8	38
7.	Cherthala	15	8543	5961	104	49	-	55	-	-	-	-	75	67	-	8
8.	Alappuzha	25	20402	20402	987	788	-	199	5	5	-	-	458	414	5	39
9.	Mavelikara	15	4371	4371	156	87	-	69	1	1	-	-	104	85	3	16
10.	Thiruvalla	15	6217	6217	130	102	-	28	-	-	-	-	87	67	-	20
11.	Changan- cherry	15	7557	5060	220	96	-	124	1	1	-	-	95	61	2	32
12.	Kottayam	15	7257	7257	154	76	-	78	-	-	-	-	95	34	-	61
13.	Palai	15	4601	4012	133	66	-	67	-	-	-	-	83	65	-	18
14.	Vaikom	15	5447	3871	152	57	-	95	-	-	-	-	58	39	-	19
15.	Muvattupuzha	15	4158	4158	198	99	-	99	-	-	-	-	72	48	3	21
16.	Kochi Corporation	15	23661	23661	693	598	-	95	-	-	-	-	286	285	-	1
17.	Aluva	15	3632	3632	138	79	-	59	-	-	-	-	66	47	3	19

**Table 8 (Contd....)**

Sl. No.	Municipality/ Corporation	No. of wards selected	Total no. of House holds	No. of House holds visited				Live Births				Infant Deaths				Other deaths				
				Enum- erated	Regi- stered	N.R	Occurred outside	Enum- erated	Regi- stered	N.R	Occurred outside	Enum- erated	Regi- stered	N.R	Occurred outside	Enum- erated	Regis- tered	N.R	Occurred outside	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
18.	N.Paravur	15	4533	4533	189	102	-	87	-	-	-	-	-	70	61	-	-	9	9	9
19.	Perumbavoor	15	4487	4487	245	116	-	129	1	-	1	-	-	94	74	-	-	20	20	20
20.	Irinjalakuda	15	6847	4588	189	71	-	118	-	-	-	-	-	78	66	-	-	12	12	12
21.	Kodungallur	15	4580	4580	211	191	-	20	2	2	-	-	-	117	107	-	-	10	10	10
22.	Chalakudy	15	6914	6369	357	218	-	139	4	1	-	-	3	152	113	7	7	32	32	32
23.	Guruvayoor	15	3739	3739	174	10	-	164	-	-	-	-	-	99	44	13	13	42	42	42
24.	Thrissur Corpn	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25.	Kumnamkulam	15	8604	5671	234	109	-	125	-	-	-	-	-	193	165	-	-	28	28	28
26.	Palakkad	15	7972	8013	437	363	1	73	9	9	-	-	-	184	148	-	-	36	36	36
27.	Chittoor- Thathamangalam	15	4573	4573	157	7	-	150	-	-	-	-	-	97	74	-	-	23	23	23
28.	Thirur	15	4632	4632	493	347	-	146	1	1	-	-	-	85	69	-	-	16	16	16
29.	Malappuram	15	7065	7255	445	359	-	86	1	1	-	-	-	88	86	2	-	-	-	-
30.	Kozhikode Corp.	15	40624	20530	1178	1079	-	99	2	2	-	-	-	466	427	18	21	21	21	21
31.	Vadakkara	15	4679	4679	244	69	-	175	-	-	1	138	105	2	2	31	31	31	31	31
32.	Thalasserry	15	5394	6231	301	288	-	13	-	-	-	-	-	127	115	1	1	11	11	11
33.	Kannur	15	9521	4288	362	239	-	124	2	1	-	1	110	72	6	6	33	33	33	
34.	Kasaragod	15	8740	5620	153	138	-	15	-	-	-	-	-	69	61	-	-	8	8	8

**Table 9 - Under Registration and Occurrence of outside events**

Sl. No	Municipality/ Corporation	% Of under registration		% of outside registration	
		Births	Deaths	Births	Deaths
1	2	3	4	5	6
1	Neyyattinkara	-	-	88.42	25.88
2	Thiruvananthapuram	-	3.90	4.90	1.40
3	Attingal	-	-	68.12	30.23
4	Kollam	-	-	12.84	18.68
5	Punalur	0.53	15.97	33.10	22.22
6	Kayamkulam	0.34	8.60	30.82	29.01
7	Mavelikara	-	3.37	44.23	15.24
8	Alappuzha	-	1.18	20.16	8.42
9	Cherthala	-	-	52.90	10.70
10	Thiruvalla	-	-	21.54	22.99
11	Changanacherry	-	3.13	56.36	33.33
12	Kottayam	-	-	50.60	64.20
13	Palai	-	-	50.37	21.68
14	Vaikom	-	-	62.50	32.76
15	Muvattupuzha	-	5.88	50.00	29.17
16	Kochi Corporation	-	-	13.70	0.35
17	Aluva	-	6.00	42.75	28.78
18	N.Paravur	-	-	46.03	12.85
19	Perumbavoor	-	1.33	52.65	21.05
20	Irinjalakuda	-	-	62.43	15.38
21	Kodungallur	-	-	9.48	8.40
22	Chalakudy	-	5.79	38.94	22.44
23	Thrissur	-	-	-	-
24	Guruvayoor	-	22.80	94.25	42.42
25	Kunnamkulam	-	-	53.42	14.51
26	Palakkad	0.27	-	16.70	18.65
27	Chittoor- Thathamangalam	-	-	95.54	23.71
28	Thirur	-	-	29.61	18.82
29	Malappuram	-	2.25	19.33	-
30	Kozhikode Corp.	-	4.04	8.40	4.51
31	Vadakara	-	1.87	71.72	22.46
32	Thalasserry	-	0.86	4.31	8.66
33	Kannur	-	7.60	34.25	30.35
34	Kasaragod	-	-	9.80	11.59

**Table 10 - Registered Vital Rates and Adjusted Residential Vital rates 2004**

Sl. No.	Municipality/ Corporation	Registered vital rates		Adjusted residential vital rates	
		Births	Deaths	Births	Deaths
1	2	3	4	5	6
1	Neyyattinkara	3.52	4.09	30.04	5.69
2	Thiruvananthapuram	7.39	3.18	7.77	3.35
3	Attingal	4.56	3.86	14.30	5.53
4	Kollam Corpn.	18.88	4.48	21.66	5.51
5	Punalur	9.00	5.64	13.53	8.63
6	Kayamkulam	14.09	4.13	20.44	6.35
7	Mavelikara	8.64	6.04	15.49	7.37
8	Alappuzha	12.82	6.77	16.06	7.48
9	Cherthala	4.77	6.39	10.13	7.16
10	Thiruvalla	7.70	6.71	9.81	8.71
11	Changanacherry	7.29	4.34	16.70	6.76
12	Kottayam	2.48	1.53	5.02	4.27
13	Palai	5.73	3.57	11.54	4.55
14	Vaikom	6.50	2.50	17.33	3.72
15	Muvattupuzha	11.00	5.70	22.00	8.56
16	Kochi Corporation	19.58	8.14	22.68	8.17
17	Aluva	5.54	3.29	9.67	4.91
18	Paravur	6.13	2.27	11.36	2.60
19	Perumbavoor	6.87	4.37	14.50	5.55
20	Irrinjalakuda	4.60	5.59	12.24	6.52
21	Kodungallur	6.14	3.47	6.78	3.77
22	Chalakkudy	9.61	5.11	15.74	6.99
23	Thrissur *				
24	Guruvayoor	0.65	2.74	11.30	6.15
25	Kunnamkulam	8.82	6.05	18.94	7.08
26	Palakkad	9.06	4.21	10.90	5.18
27	Chittoor- Thathamangalam	0.49	5.65	10.79	7.41
28	Thirur	11.77	3.43	16.72	4.23
29	Malappuram	7.21	1.44	8.94	1.44
30	Kozhikkode Corpn.	10.95	5.59	11.95	6.11
31	Vadakara	5.60	5.57	19.80	7.33
32	Thalasserry	30.12	6.01	31.48	6.64
33	Kannur	10.99	4.47	16.71	6.95
34	Kasaragod	15.42	3.76	17.09	4.25

\*Due to the non-availability of reports, the figures could not be worked out.

## APPENDIX

### Method of calculation of adjusted residential vital rates

Residential vital rates can broadly be defined as the rate of occurrence of vital events among the normal residents of an area in a year. In order to calculate the percentage of under registration, the events occurring among persons coming to the town/city to avail themselves of better medical facilities are excluded and those of normal residents who are going outside the town are included.

1. Percentage of under registration	$\frac{\text{Number of events occurred to normal residents inside the town but not registered} \times 100}{\text{Number of events occurred among normal residents inside the town registered and not registered}}$
2. Percentage of events occurred outside the town to normal residents	$\frac{\text{Number of events occurred among normal residents outside the town registered and unregistered} \times 100}{\text{Number of events enumerated and occurred among normal residents inside and outside the town}}$
3. Registered birth/death rate to normal residents	$\frac{\text{Total no of birth/death occurred to normal residents and registered in the town} \times 1000}{\text{Mid year population of the town}}$
4. Residential birth/death rate to normal residents occurred inside the town (weighted for under registration)	$\frac{\text{Registered birth/death rate} \times 100}{(100 - \text{percentage of under registration})}$
5. Adjusted Residential birth/death rate (weighted for outside events)	$\frac{\text{Residential birth/death rate to normal residents occurred inside the town (weighted for under registration)} \times 100}{(100 - \text{Percentage of events occurred outside the town to normal residents})}$



