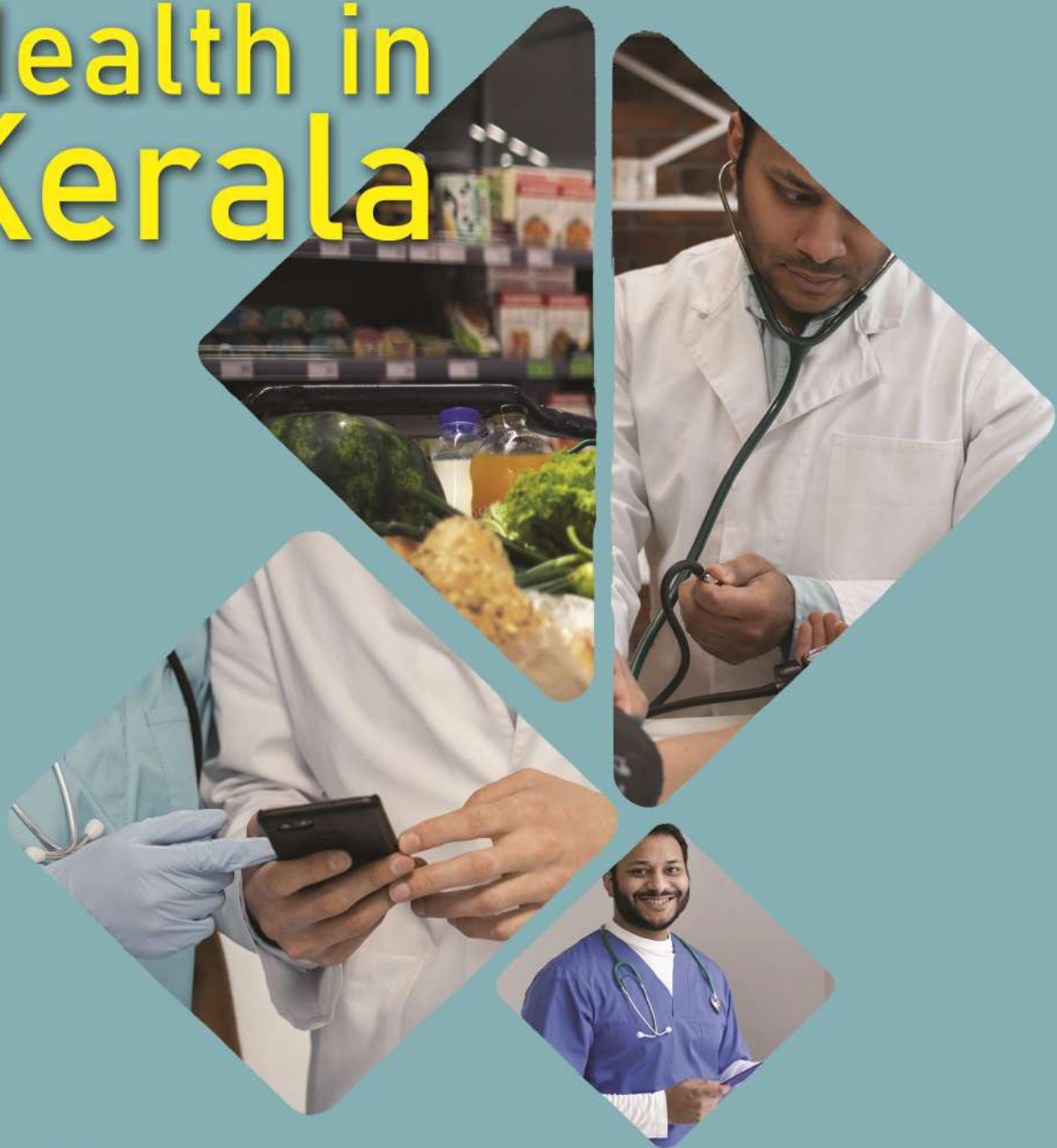


Report on Household Social Consumption:



Government of Kerala

Health in Kerala



Based on
75th Round NSS Socio Economic Survey
(July 2017 - June 2018)
(Central and State Sample Pooled Data)

Department of Economics and Statistics
Kerala



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Preface

The National Sample Survey on Household Social Consumption related Health serves as a critical source of primary data on health-related aspects across the country. This survey captures essential information on various health sector dimensions, including morbidity patterns, profile of ailments and their treatments, role of government and private healthcare facilities, expenditure on medicines, medical consultations, diagnostic investigations, hospitalization costs, maternity and childbirth, as well as the condition of the aged population.

National Statistics Office (NSO) last conducted this comprehensive survey from July 2017 to June 2018, as part of its 75th round. Department of Economics and Statistics, Kerala, as a longstanding partner in National Sample Surveys, also participated with the objective of generating district-level estimates by pooling central and state sample data. Although the survey gathered extensive health-related information, only broad parameters were pooled owing to the limited sample size at the district level, and this report is based on the pooled estimates from the central and state samples.

I extend my sincere gratitude to National Statistics Office (NSO), Government of India, for their continued technical guidance to the Department of Economics and statistics (DES) Kerala, particularly in the estimation and pooling of central and state samples for National Sample Surveys, I would like to take this opportunity to acknowledge the dedicated efforts of the supervisory officers and staff-both directly and indirectly involved - in successfully conducting the fieldwork and preparing this report, under the guidance of Shri. Manoj M, Additional Director (State Income).

I hope this report will be useful to planners, policy makers, researchers and all segments of the society who are engaged in the field of health care.

Thiruvananthapuram
14/10/2024



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Highlights

The report is based on the central and state sample data collected through the survey on Social Consumption: Health during July 2017- June 2018 as part of 75th round National Sample Survey.

- ◆ The number of persons reporting ailments during the reference period of 15 days is 237 in Kerala, which corresponds to 239 per 1000 persons in rural areas and 236 per 1000 persons in urban areas.
- ◆ The number of people reporting ailments per thousand individuals, based on a 15-day reference period, varies across districts in both rural and urban areas. Kottayam has the highest rate at 411 cases per thousand, followed by Thrissur with 380 cases. Alappuzha reports 285 cases, while Palakkad has the lowest rate at 106 cases. Malappuram and Kannur report 190 and 199 cases, respectively.
- ◆ In rural areas, the incidence of reported ailments per thousand individuals over a 15-day period is highest in Thrissur at 405 cases, followed by Kottayam with 397 cases and Alappuzha with 304 cases. In contrast, Palakkad has the lowest incidence at 106 cases, with Malappuram and Kannur reporting 190 and 199 cases, respectively.
- ◆ In urban areas, the incidence of reported ailments per thousand individuals during a 15-day period is highest in Kottayam at 444 cases, followed by Thrissur with 363 cases and Idukki with 309 cases. In contrast, Palakkad has the lowest number at 136 cases, with Pathanamthitta and Wayanad reporting 146 and 161 cases, respectively.
- ◆ The average total medical expenditure for treatment per hospitalization case in rural areas varies significantly across districts, with Ernakulam having the highest expenditure at ₹24,365 per hospitalization and Wayanad having the lowest at ₹7,488.
- ◆ In urban areas, the average total medical expenditure per hospitalization case is highest in Ernakulam district at ₹33,329, while Wayanad district has the lowest expenditure at ₹7,536.

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- ◆ In the combined rural and urban areas of Kerala's 14 districts, Ernakulam has the highest medical expenditure for treatment per hospitalization case at ₹30,526 over a 365-day period, while Wayanad has the lowest at ₹7,489.
 - ◆ The average total medical expenditure for treatment per hospitalization case during a stay at a hospital over 365 days in Kerala is ₹ 19,126. It varies between ₹ 16,693 in rural areas and ₹ 22,440 in urban areas.
 - ◆ The average medical expenditure for treating each ailing person over a 15-day period in Kerala is ₹451. In rural areas, this amount is ₹419, while in urban areas, it is ₹491.
 - ◆ In rural areas of Kerala, Ernakulam has the highest average medical expenditure at ₹803, whereas Kottayam has the lowest at ₹218.
 - ◆ Among the urban areas in Kerala, Kozhikode district has the highest average total medical expenditure of ₹740 for treatment per ailing person during a period of 15 days, while Pathanamthitta district has the lowest expenditure of ₹182 .
 - ◆ Among the districts in Kerala, Ernakulam has the highest average total medical expenditure of ₹644 for treatment per ailing person during a period of 15 days, while Kottayam has the lowest expenditure of ₹ 234.

Abbreviations

List of Abbreviations used in the Report

Abbreviation	Description
DES	Department of Economics and Statistics
NSO	National Statistical Office
NSS	National Sample Survey
FSU	First Stage Unit
TVM	Thiruvananthapuram
KLM	Kollam
PTA	Pathanamthitta
ALP	Alappuzha
KTM	Kottayam
IDK	Idukki
EKM	Ernakulam
TSR	Thrissur
PKD	Palakkad
MLP	Malappuram
KKD	Kozhikkode
WND	Wayanad
KNR	Kannur
KSD	Kasaragod
PPRA	Proportion of Persons Reporting Ailments
EC	Excluding Child Birth

Chapter 1

Introduction

Chapter - 1

Introduction

1.1 Introduction

The National Sample Survey Office (NSSO), set up by the government of India in 1950, with the idea of having a permanent survey organization to collect socio-economic data employing scientific sampling methods, NSSO conducts nationwide sample surveys known as National Sample Survey (NSS). The NSS is a continuing survey in the sense that it is carried out in the form of successive rounds each round usually of a year's duration covering several topics of contemporary importance.

NSS health surveys are one of the important sources of primary data on household social consumption related to health across the country. The first full-scale NSS health survey was conducted in 28th round of NSS (1973-74). Since the 1990's there have been four health surveys of NSO (erstwhile NSSO) those of 52nd round (July 1995-June 1996), the 60th round (January 2004-June 2004), 71st round (January 2014-June 2014), and the 75th round (July 2017 –June 2018), on while the present, report is based in the 75th round of NSS, data collection in Kerala involved 4,467 randomly selected household by the NSO (central sample) and 4,465 randomly selected household by the DES (State sample). The report is prepared based on estimates derived from the pooled data of both the Central and State samples.

1.2 Objective of the survey

The 75th round survey was aimed at generating basic quantitative information on the health sector. Determining the prevalence rate at state and national level of general morbidity by age-group and gender, as well as of specific categories of ailment, was a major objective of the survey. Measurement of the extent of use of health services provided by the government was another important task. As in the previous surveys, special emphasis was placed on ailments requiring hospitalisation, ie, treatment as an in-patient of a medical institution. The survey investigated the nature of ailments for which people of various ages were hospitalised, the extent of use of government hospitals, and the expenditure incurred on treatment received from government and private facilities. The break-up of expenditure, as in-patient or otherwise, incurred on various items was estimated to the extent possible. The relative importance of alternative schools of medicine in providing health care was also assessed.

The survey was also designed to provide estimates of the incidence and nature of pre-natal and post-natal care, place of childbirth, and expenditure incurred on childbirth and on maternal care, among women who had experienced pregnancy during the last one year. Further, the proportions of children having received specific immunisations of fully immunised children and children who had received no immunisation were estimated for appropriate age-groups of children aged 0-5 years for the purpose of generating SDG (Sustainable Development Goals) indicators of immunisation status. Finally, as in earlier surveys, a profile of aged persons by living arrangement, economic dependence and mobility was generated from information collected on the population aged 60 or more.

1.3 Comparability with earlier surveys

1. ***Treatments not administered on medical advice:*** Up to and including the 60th round(2004) survey, ailments that had not been treated on medical advice were not considered as having been treated at all. Self-medication, use of medicines taken on the advice of persons in chemists' shops, etc. were not considered as medical treatment, and ailments for which only such medication was taken were considered as untreated ailments. In the 2014 survey and the current survey (2017-18), however, all such treatments were considered as medical treatment.
2. ***Disabilities:*** In the 2004 survey and earlier surveys on health, persons with disabilities were regarded as ailing persons. In the 2014 and 2017-18 survey, pre-existing disabilities were considered as (chronic) ailments provided they were under treatment for a month or more during the reference period, but otherwise were not considered ailments. Disabilities acquired during the last 15 days as on date of survey were, however, included in ailments.
3. ***Classification of ailments:*** In the 2014 survey the list of ailments that the survey was expected to identify was made more detailed and comprehensive and in line with the requirements of the Ministry of Health and Family Welfare. A list of 60 ailments was used, compared to the 42-ailment list used in the 2004 survey. The present survey has essentially retained this classification of ailments.
4. ***Classification of nature of treatment:*** When information on nature of treatment was collected, the options 'Indian System of Medicine' (including Ayurveda, Unani and Siddha), Homeopathy and 'Yoga or Naturopathy' were provided in the list of responses to enable tabulation of data separately for treatments by different systems of medicine. This too an another feature first introduced in the 2014 survey (NSS 71st round).

5. ***Re-defining a household to get better data on cost of childbirth:*** In the 2014 survey each woman who had undergone childbirth during the last one year was, in the interests of more accurate data collection, considered a member of the household which had borne the cost of childbirth, and all information on pregnancy, including pre-natal and post-natal care, was obtained from this household. This procedure led to difficulties in field work and was therefore not followed in 2017-18 survey.

1.4 Indicators

The indicators presented here are of the following kinds:

A. Expenditure on healthcare

Average medical expenditure per case of hospitalization (Excluding child birth) during stay at hospital over last 365 days by district.

- Rural , Urban and All

B. Nature and treatment of ailments

Number per thousand persons reporting ailments (PPRA) during the last 15 days by district

- Rural , urban and All
- Age -group

C . Expenditure for treatment per ailing person during a period of 15 days by district

- Rural , urban and all

1.5 Schedule of enquiry

The schedule used for data collection from each surveyed household was named Schedule 25.0 and is included as Appendix D of this document. Apart from basic household characteristics, it recorded age, gender, and other important information for each household member before collecting particulars of illness and healthcare.

On health, data were collected under the following broad to basic items.

details of each case of hospitalisation of any household member during the 365 days prior to the date of survey, including expenditure incurred for treatment while in hospital

- (a) details of all ailments (due to illnesses or injuries) experienced by household members during the 15 days prior to the date of survey, including expenditure incurred for treatment without hospitalisation
- (b) details of the pregnancy of every female household member aged 15-49 years who was reported to have been pregnant at any time during the last 365 days, covering pre-natal care, and of childbirth and post-natal care if applicable, and including expenditure on childbirth
- (c) details of immunizations received by all children under 6 years of age
- (d) details of mobility, living arrangement and economic independence of members aged 60 or more.

1.6 Population estimates

Like most socio-economic surveys, this survey used a moving reference period, meaning that different surveyed households reported information for different time points or periods depending on the date of survey. Population estimates required for deriving rates such as the Proportion of Persons that Responded as Ailing (PPRA), the proportion of persons treated as in-patient, were based on the data collected on household size. For simplicity, the population estimates used for deriving the PPRA were based on the household size as reported (on the date of survey) without adjusting for former members who were reported to have died during the reference period of 15 days preceding the date of survey.

On the other hand, the population estimates used for deriving the proportion of persons treated as in-patient in hospital during a 365-day period were adjusted to include the members who had died during the 365-day reference period. It may be noted that this survey was not specifically designed to estimate number of households and persons but these figures can be used to combine rates and ratios pertaining to different indicators. These are design based estimates used for specific purpose only.

1.7 Sample size

First stage units: As usual, most States and Union Territories participated in the survey: a 'State sample' was surveyed by State Government officials in addition to the 'Central sample' surveyed by NSSO. For rural sector the number of FSU's surveyed in the State sample was 299 and that of urban sector was 260.

Sample size : In Kerala 559 samples were covered consisting of 299 rural villages and 260 urban blocks. The total numbers of households surveyed in rural villages and urban blocks were 2387 and 2078 respectively. Sector wise number of samples surveyed are given in below.

Total sample size

Sector	Number of Surveyed					
	Central Sample			State Sample		
	FSU	House holds	Persons	FSU	House holds	Persons
Rural	299	2392	10682	299	2387	10547
Urban	260	2075	9119	260	2078	9104
R + U	559	4467	19801	559	4465	19651

Chapter - 2

Concepts and Definitions

Chapter - 2

Concepts and Definitions

2.1 Illness and Hospitalization

1. **Ailment:** Ailment (illness or injury) means any deviation from a person's state of physical and mental well-being. For the purpose of this survey, ailment included (a) All types of injuries, such as cuts, wounds, haemorrhage, fractures and burns caused by an accident, including bites to any part of the body (b) Cases of abortion – natural or accidental. Ailments excluded (i) Cases of sterilisation, insertion of IUD, medical termination of pregnancy, etc. (ii) A state of normal pregnancy without complications (iii) Minor skin ailments, minor headaches and body aches, and minor gastric discomfort after meals (iv) Cases of pre-existing disabilities, unless a course of treatment of the disability on medical advice for a period of one month or more was continuing as on the date of survey.
2. **Chronic ailment:** A chronic ailment existing on the date of survey was identified as an ailment satisfying one of the following criteria I and II. (I) Symptoms of the ailment (subject to the exclusions (i)-(iv) mentioned in the definition of ailment) persisting for more than one month on the date of survey. (II) A course of treatment of the ailment (*no exclusions*), on medical advice, continuing for a month or more on the date of survey.
3. **Spell of ailment:** A spell is a continuous period of sickness due to a specific ailment.
4. **Hospitalisation:** To be hospitalised means to be *admitted as an in-patient* in a medical institution. A person who under went surgery in a temporary camp or day care centre was also considered to have been hospitalised for the purposes of this survey.
5. **Case of hospitalisation:** Each admission to hospital was counted as a separate hospitalisation case for the purpose of this survey.

2.2 Healthcare Facilities Used

1 Level of care : This term is used for the classification of treated ailments by healthcare facility used. The complete level-of-care classification used in the schedule of enquiry was as follows:

Government/ public hospital (incl. HSC/PHC/CHCetc.)

Charitable/trust/NGO-runhospital

Private hospital Private doctor /clinic

In formal health care provider

2.3 Nature of Treatment

- Allopathy:** This refers to the broad category of medical practice that is sometimes called Western medicine, biomedicine, evidence-based medicine, or modern medicine. According to MedTerms Dictionary, allopathic medicine is defined as “the system of medical practice which treats disease by the use of remedies which produce effects different from those produced by the disease under treatment”.
- Indian System of Medicines (ISM):** This includes Ayurveda, Siddha, Unani and Sowa- Rig-Pa medicines. These medicines are also called *desidawaiyanin* India. Herbal medicines are also included in this category of medicines. The practitioners of these systems may be called (*jadi-booti wale*) Vaidji, Vaidya, Siddha Vaidya, Hakim, etc. This category also includes home-made medicines and *gharelunuskhe*, herbal medicines(*jadi-bootiyan or desidawa*), and the medicines given by local Vaidya/Hakim. e.g. *neem* leaves for skin diseases, *tulsileaves* for common cold, *haldi* (turmeric) for injuries and fracture, *adarak* (ginger) for cough,cold, throat problem etc., *lahasun* (garlic) for *gathiya/* joint pain, *kali mirch*(pepper) and honey for dry and productive cough, *ashwagandha*, *chyanprashas* tonic, *rasayanaforenergy*, *gulabjal*for eye diseases and face wash, *saunf* for indigestion, *ajowainand hing* for stomach pain, *methiseeds*, *ajawain*, *pudina* (mint), *jeera*, *sunthi*(dry ginger), *laung*(clove),oil for toothache, *triphala* powder for problems like indigestion, loss of appetite, constipation,*bilva* (*bel*) powder for diarrhoea, etc.
- Homeopathy:** Homeopathy is a system of medicine that uses highly diluted doses from the plant,mineral and animal kingdoms to stimulate natural defenses in the body. Oral Homeopathy medicine is available in many forms, including the traditional homeopathic pellets (balls), liquid dilution, tablets (lactose-based) and mother tincture.

- **Yoga and Naturopathy:** Yoga is a combination of breathing exercises (pranayam), physical postures (asanas) and meditation for curing illness and releasing stress, both physical and mental. In Naturopathy treatments are based on five elements of nature, namely, (i) Earth (mudbaths, mudpacks, mudwraps) (ii) Water (hydrotherapy methods like baths, jets, douches, packs, immersions, compresses/fomentations) (iii) Air (breathing exercises, out doorwalking, open-airbaths) (iv) Fire (sunbaths, magnetized water) (v) Ether (fasting therapy).
- **AYUSH:** Each letter of the word AYUSH represents a specific system of medicine: A for Ayurveda, Y for Yoga and Naturopathy, U for Unani, S for Siddha, and H for Homeopathy. Thus AYUSH encompasses the Indian System of Medicines, Yoga and Naturopathy, and Homeopathy. Treatment by any of these systems therefore qualified as AYUSH treatment, and medicines used by any of these systems were called AYUSH medicines.

2.4 Medical expenditure

- **Medical expenditure in a case of hospitalisation:** This includes bed charges, doctor's/surgeon's fees, total amount paid for medicines, diagnostic tests, attendant charges, physiotherapy, personal medical appliances, blood, oxygen, etc. during stay at the hospital (within the reference period of last 365 days) – whether made available by the hospital or procured from outside. Expenses on transportation of the patient to or from the hospital are excluded, and so is expenditure on food.
- **Package component:** Packages of treatment involving specific surgical or non-surgical medical procedures, inclusive of different items like operation theatre (OT) charges, OT consumables, medicines, doctor's fees, bed charges, etc. are common nowadays in all private hospitals. (Normally, packages do not include additional diagnostic tests, attendant charges, physiotherapy, personal medical appliances, blood, oxygen, etc.) When expenditure for a hospitalization case involves a package component, the usual break-up of total expenditure by its various components such as bed charges, doctor's/surgeon's fees, etc. will not be available. Therefore, in deriving the break-up of expenditure (aggregate or per-hospitalisation-case) by its components, (i) a "package component" has to be shown (ii) the expenditures on the other components get under-estimated to the extent that packages of treatment are a common feature.

- **Medical expenditure, out-of-pocket medical expenditure, and amount of reimbursement:** In cases of both hospitalised and non-hospitalised treatment, some amount of medical expenditure may be reimbursed by employers or by insurance companies (public or private), or by any other agencies. In this survey, expenditures were recorded when (and only when) borne initially by the patient's household, whether or not reimbursed later. The amount reimbursed later was also separately recorded. In cases where reimbursement was of the cashless form, the payment (made to hospital or doctor directly by the employer or insurance company) was not recorded by the survey. Thus (i) the estimates of medical expenditure given in this document include expenses reimbursed later, but not expenses that the household did not have to bear even initially (ii) estimates of amount of reimbursement include only the reimbursement that was made later, with the initial payment having been made by the household.

Chapter - 3

Testing Poolability of Central and State Sample

Chapter - 3

Testing Poolability of Central and State Sample

3.1 Introduction

Though the central sample and state sample are drawn independently following identical sampling design with same concepts, definitions and instructions to collect the state sample data, different non-sampling errors may be occurred due to different reasons like lack of training to the field staff and data processing staff, agency bias etc. If so the effort of pooling of central and state sample data to generate district level estimates will not be fruitful. Therefore before pooling one need to examine the magnitude of divergence between central and state estimates and to test the samples are coming from identical distribution.

3.2 Parameters considered for Pooling

Considering the small sample size at district level the following broad parameters were considered for pooling.

1. Number of person reporting ailments by age -group
2. Medical expenditure per hospitalisation case
3. Total medical expenditure per ailing person

3.3 Testing Poolability of Parameters

Since the parametric distribution of sample mean is unknown, non parametric tests such as Chi-square test and run test have been adopted to test whether the samples are coming from identical distribution. Procedure of the tests are explained below.

Multinomial distribution test or χ^2 test

For discrete data such as status of activity, educational level and categorical variable such as land possessed etc, standard tests of equality of sample proportions of two sets of data based on multinomial distributions, relevant chi-square tests may be used after grouping the attributes/categorical variables in to a suitable number of classes so that each class contains adequate number of sample observations. Construct 2xk contingency table for k classes at the domain where two sets of data are to be pooled as below and use chi-square test if State sample and Central sample have identical distribution.

Sample-type	No of sample observation					Total
	Class-1	Class-2	...	Class-k-1	Class-k	
State Sample	N ₁₁	N ₁₂	...	N _{1k-1}	N _{1k}	N _{1.}
Central Sample	N ₂₁	N ₂₂	...	N _{2k-1}	N _{2k}	N _{2.}
Total	N _{.1}	N _{.2}	...	N _{.k-1}	N _{.k}	N _{..}

Observed frequency of each cell $O_{ij} = N_{ij}$ where $i = 1$ to 2 , $j = 1$ to k .

Expected frequency of each cell $E_{ij} = (N_{i.} * N_{.j}) / N_{..}$ where $i = 1$ to 2 , $j = 1$ to k .

$$\chi^2 \text{ Value} = \sum_{i=1}^2 \sum_{j=1}^k (O_{ij} - E_{ij})^2 / E_{ij} \text{ with degrees of freedom} = (2-1)*(k-1) = k-1$$

Accordingly Chi-square test was performed for social group wise number of hospitalization cases and the results are depicted in statement 3.3. and statement 3.4.

Table 1

Sector: Rural				
District wise result of chi square test of Hospitalisation cases for pooled sample $Z^2 0.01 \leq 11.345$ (one sided test) reject if z value $< Z^2_{0.01}$				
Sl.No	District	Z- Value	Degrees of freedom	Status
1	Kasargod	5.43	3	Accept
2	Kannur	1.59	3	Accept
3	Wyanad	6.41	3	Accept
4	Kozhikode	3.45	3	Accept
5	Malappuram	6.17	3	Accept
6	Palakkad	12.00	3	Reject
7	Thrissur	2.97	3	Accept
8	Eranakulam	13.03	3	Reject
9	Idukki	1.90	3	Accept
10	Kottayam	13.64	3	Reject
11	Alappuza	2.11	3	Accept
12	Pathanamthitta	2.18	3	Accept
13	Kollam	8.47	3	Accept
14	Thiruvananthapuram	13.18	3	Reject

Table 2

Sector Urban	District wise result of chi square test of Hospitalisation cases for pooled sample $Z^2 \leq 11.345$ (one sided test) reject if z value $< Z_{0.01}$				
	Sl.No	District	Z- Value	Degrees of freedom	Status
	1	Kasargod	9.06	3	Accept
	2	Kannur	9.97	3	Accept
	3	Wyanad	1.64	3	Accept
	4	Kozhikode	4.61	3	Accept
	5	Malappuram	13.98	3	Reject
	6	Palakkad	5.86	3	Accept
	7	Thrissur	4.46	3	Accept
	8	Eranakulam	6.61	3	Accept
	9	Idukki	3.33	3	Accept
	10	Kottayam	1.59	3	Accept
	11	Alappuza	7.41	3	Accept
	12	Pathanamthitta	5.61	3	Accept
	13	Kollam	18.86	3	Reject
	14	Thiruvananthapuram	10.63	3	Accept

In rural areas, the chi-square test rejected the poolability of data for Palakkad, Eranakulam, Kottayam, and Thiruvananthapuram districts. In urban areas, the test accepted the poolability of data for all districts except Malappuram and Kollam.

The Run Test is performed for 'medical expenditure per hospitalization' to check the poolability of central and state sample data. The procedure of run test is described below.

Wald-Wolfowitz run test (Non-parametric)

Suppose X and Y are independent random samples with cumulative distribution function (CDF) as $F_s(x)$ and $F_c(y)$. Null Hypothesis to be tested is $H_0: F_s(x) = F_c(x)$ for all x against alternative Hypothesis is $H_1: F_s(x) \leq F_c(x)$ for all x and $F_s(x) < F_c(x)$ for some x.

Let x_1, x_2, \dots, x_m be iid observation from state sample with distributive function F_s and y_1, y_2, \dots, y_n be iid observation from central sample with distributive function F_c . Pool the data and order them with respect to comparable characteristic under consideration say monthly per capita expenditure (MPCE). In the pooled order sequence put "1" for X and "0" for Y.

Let U be the total runs observed where 'run' is a sequence of adjacent equal symbols. For example, following sequence: 111100011100111110000 is divided in six runs, three of them are made out of "1" and the others are made out of "0". The number of runs U is a random variable whose distribution for large sample can be treated as normal with:

$$\text{mean: } \frac{2mn}{m+n} + 1$$

$$\text{variance: } \frac{2mn(2mn - m - n)}{(m+n)^2(m+n-1)}$$

After normalizing the variable U one may use one sided z-test for testing the Null hypothesis. In extreme case the value of U will be 2 meaning by observed characteristic of all the observation of one sample is less than the other samples. One of the limitations of this test is when there is a tie between two samples in the observed value. One has to resolve ties in usual manner. However if there is large number of ties which is bound to occur specially for qualitative attributes like education level, activity status, etc, this test is not recommended. This test can be well applied for a continuous variable such as MPCE which are less prone to ties.

This test is used for testing the randomness of observed data on the basis of the order in which they are obtained. The run test is sensitive to both differ even in shape and differ even in location between the distributions.

The results of the run test for the parameter 'Medical Expenditure per Hospitalisation' are presented in Statements 3.5 and 3.6. The test indicates that the poolability of data is rejected for rural areas in Thrissur and Wayanad districts, as well as for urban areas in Kasaragode district.

Table 3

Sector Rural	District wise result of run test of Hospital expenditure for pooled sample $Z_{0.01} = -2.33$ (one sided test) reject if z value $< Z_{0.01}$			
	Sl.No	District	z- Value	Status
	1	Kasargod	-0.75	Accept
	2	Kannur	0.96	Accept
	3	Wyanad	-4.79	Reject
	4	Kozhikode	-0.42	Accept
	5	Malappuram	0.42	Accept
	6	Palakkad	-1.32	Accept
	7	Thrissur	-2.68	Reject
	8	Eranakulam	0.67	Accept
	9	Idukki	-0.38	Accept
	10	Kottayam	-1.43	Accept
	11	Alappuza	-0.93	Accept
	12	Pathanamthitta	-0.56	Accept
	13	Kollam	-0.44	Accept
	14	Thiruvananthapuram	-1.93	Accept

Table 4

Sector Urban	District wise result of run test of Hospital expenditure for pooled sample $Z_{0.01} = -2.33$ (one sided test) reject if z value $< Z_{0.01}$			
	Sl.No	District	z- Value	Status
	1	Kasargod	-5.72	Reject
	2	Kannur	-0.31	Accept
	3	Wyanad	-0.11	Accept
	4	Kozhikode	1.02	Accept
	5	Malappuram	-2.16	Accept
	6	Palakkad	-0.91	Accept
	7	Thrissur	-2.27	Accept
	8	Eranakulam	-1.43	Accept
	9	Idukki	-1.98	Accept
	10	Kottayam	-1.93	Accept
	11	Alappuza	-0.23	Accept
	12	Pathanamthitta	-0.36	Accept
	13	Kollam	-0.83	Accept
	14	Thiruvananthapuram	-1.41	Accept

Chapter - 4

Key Findings

Chapter - 4

Key Findings

4.1. Introduction

The NSS survey on ‘Household Social consumption in India: Health’ is one of the important sources of information on the health care systems prevailing in India. Data collected in this survey is used to compile indicators on morbidity and hospitalisation, utilization of both public and private health care facilities, households ‘out of pocket expenses’ on medical and health care, access to government financed health insurance programmes, role of alternative schools of medicine (AYUSH) in public health management, etc. This Chapter summaries the major findings of the survey based on central and state sample pooled data and discusses the salient features unfolding indicators ailments, hospitalization and expenditure incurred as well as indicators describing childbirth and related issues. This may be important to note in this perspective that, households (or persons within households) are aggregated in sector (rural/urban) by their place of domicile, and not by the place of treatment.

4.2 Methodology of Pooling

When the State’s participation is of unequal matching of central samples, the weighted average of two estimates with weights being matching ratio of central and state sample may be a better way of combining the estimates considering central and state samples as independent samples. For any characteristic, consider the state sample [s] in the form of two independent sub-sample s1 and s2 and the central sample[c] in the form of two independent sub- sample c1 and c2. Let matching ratio of state and central sample be **m : n**. Based on this, the respective estimates for state and central can be computed as:

$$t_s = \sum_i (t_{s1} + t_{s2})/2 \text{ and } t_c = \sum_i (t_{c1} + t_{c2})/2$$

Pooled estimate of these two estimates is given by weighing with matching participation rate m:n. Thus the pooled estimate is given by:

$$t_p = \frac{mt_s + nt_c}{m+n} \text{ with } V(t_p) = \frac{m^2 V(t_s) + n^2 V(t_c)}{(m+n)^2}$$

In general $V(t_c)$ and $V(t_s)$ can be estimated as $\hat{V}(t_c) = \sum_l (t_{c1} - t_{c2})^2 / 4$,

$$\hat{V}(t_s) = \sum_l (t_{s1} - t_{s2})^2 / 4 \text{ and thus } \hat{V}(t_p) = \frac{m^2 \hat{V}(t_s) + n^2 \hat{V}(t_c)}{(m+n)^2}$$

The pooled estimate will always lie between the estimates based on central and state sample separately.

In 75th round, DES Kerala participated in the survey with a sample size equal to that of the central sample

4.3. Proportion of Persons that Responded as Ailing (PPRA) in a 15-day period

For any group or domain, for example, the rural male population, proportion of persons that responded as ailing (PPRA) in a 15-day period is defined as the 'estimated number of persons in the population reported ailing' as a proportion of 'estimated total population' obtained on the basis of the survey data.

Proportion of Persons that Responded as Ailing (PPRA) in a 15-day period by age-group and Sector is presented in statement 4.1. The PPRA increases significantly with age. The lowest PPRA is observed in the 15-44 age group, with 100 in rural areas, 102 in urban areas, and 101 overall. For the 0-14 age group, the PPRA is slightly higher, with rural and urban areas showing similar values (125 and 124, respectively). A marked increase in PPRA is observed in the 45-59 age group, where it rises to 328 in rural areas and 350 in urban areas. The highest PPRA is in the 60+ age group, with 633 in rural areas, 625 in urban areas, and 629 overall. Across all age groups combined, the PPRA is slightly higher in rural areas (239) compared to urban areas (236), with an overall PPRA of 237.

Statement 4.1: Proportion of Persons that Responded as Ailing (PPRA) in a 15-day period by age-group and Sector.

Age group	Rural	Urban	All
0-14	125	124	124
15-44	100	102	101
45-59	328	350	338
60+	633	625	629
All	239	236	237

Figure 4.1 : Age-group and Sector wise Proportion of Persons that Responded as Ailing (PPRA) during the last 15 days

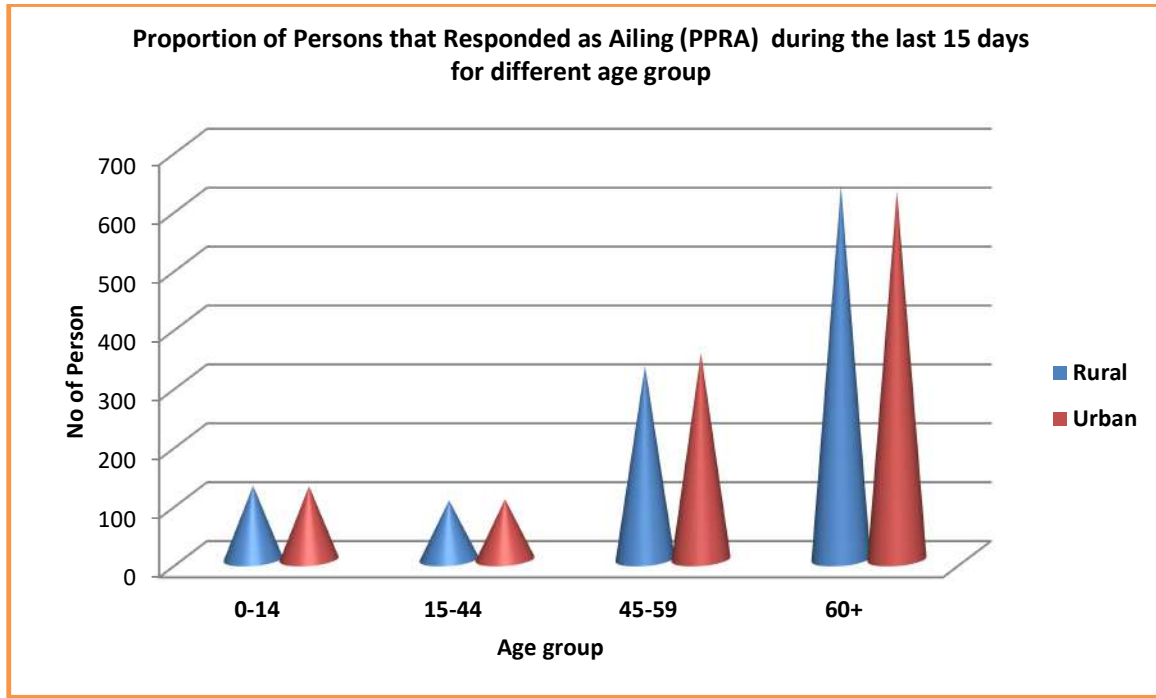
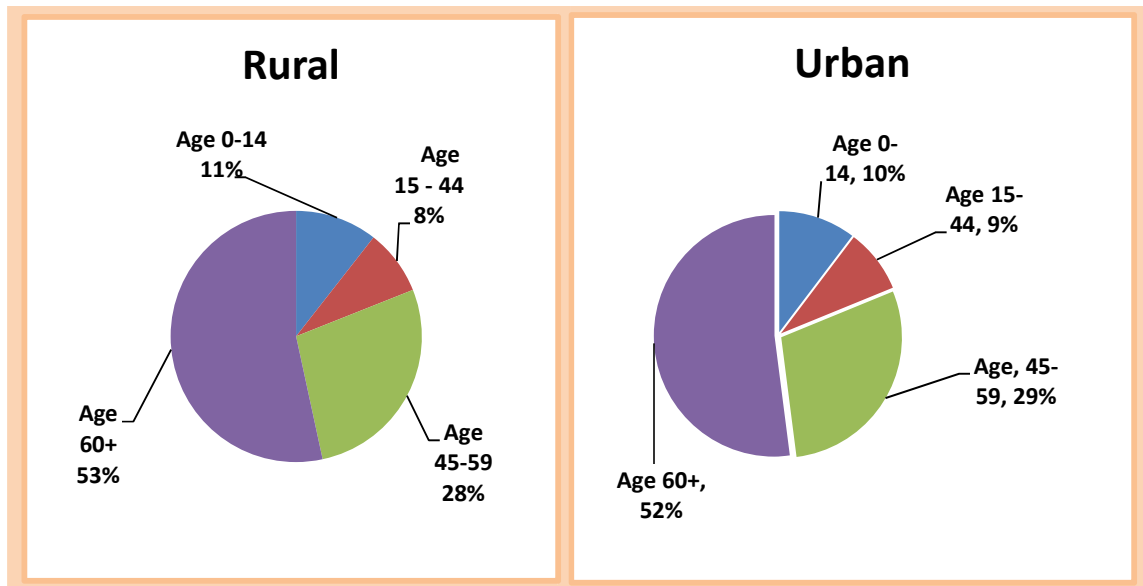


Figure 4.2 : Age-group and Sector wise Percentage of Persons that Responded as Ailing (PPRA) during the last 15 days



Statement 4.2 District wise per thousand persons reporting ailments (PPRA) during the last 15 days

Per thousand persons reporting ailments (PPRA) during the last 15 days			
District	Rural	Urban	All
Kasargod	208	225	214
Kannur	192	203	199
Wyanad	242	161	239
Kozhikode	216	202	207
Malappuram	191	187	190
Palakkad	98	136	106
Thrissur	405	363	380
Eranakulam	266	200	221
Idukki	256	309	259
Kottayam	397	444	411
Alappuza	304	267	285
Pathanamthitta	216	146	209
Kollam	233	228	231
Thiruvananthapuram	268	247	257
All	239	236	237

Figure 4.3: Per thousand persons reporting ailments (PPRA) during the last 15 days in Rural and Urban

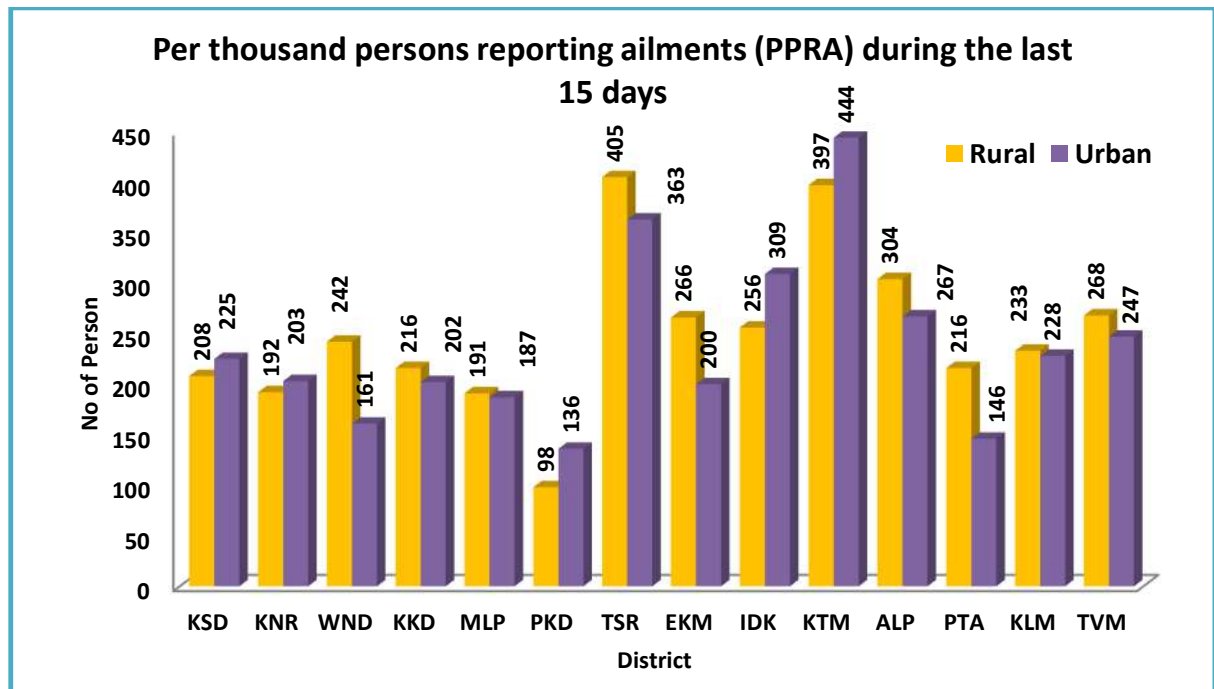
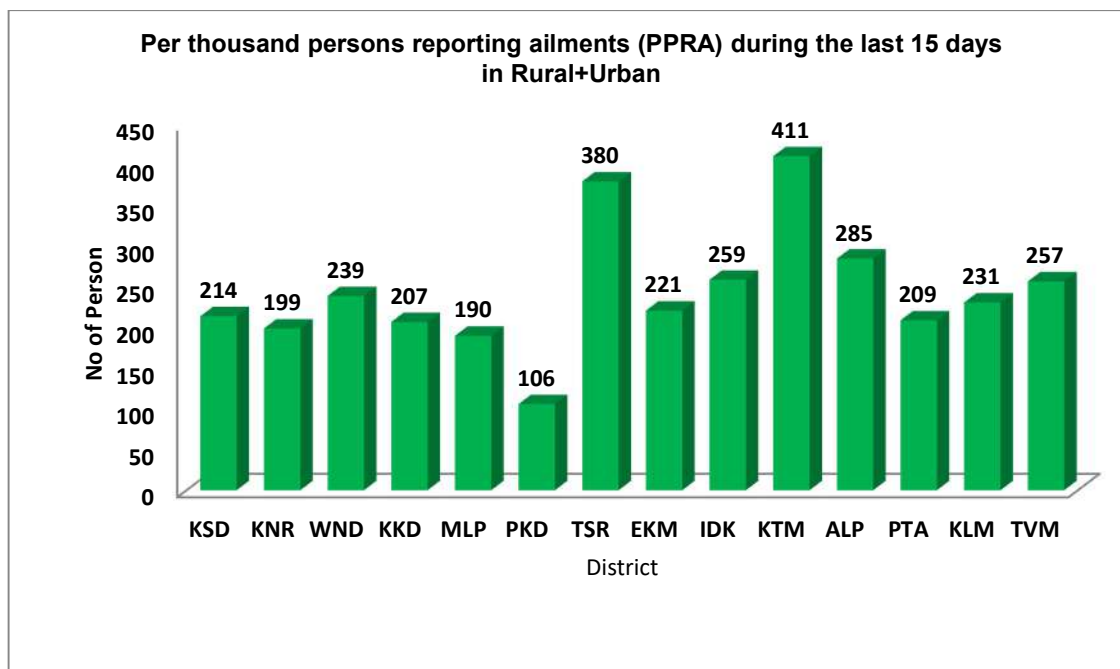


Figure 4.4: Per thousand persons reporting ailments (PPRA) during the last 15 days in Rural + Urban



District-wise data on the per thousand persons reporting ailments (PPRA) during the last 15 days, broken down by rural, urban, and overall sectors are presented in statement 4.2, Figure 4.3 and Figure 4.4. There is noticeable variation across districts in both rural and urban areas. Kottayam reports the highest PPRA overall (411), with rural (397) and urban (444) areas both showing elevated levels. Thrissur follows closely, with an overall PPRA of 380, reflecting high rates in both rural (405) and urban (363) sectors. In contrast, Palakkad has the lowest overall PPRA at 106, with rural areas particularly low at 98. Districts like Wayanad and Pathanamthitta exhibit a larger rural-urban disparity, with Wayanad showing a high rural PPRA (242) compared to a lower urban PPRA (161), while Pathanamthitta has a higher rural PPRA (216) compared to its urban counterpart (146).

4.3. Expenditure on Hospitalisation in a 365-day period

Information on expenses was collected separately for each different event of hospitalization during the reference period. Medical expenditure in a case of hospitalisation: This includes bed charges, doctor's/surgeon's fees, total amount paid for medicines, diagnostic tests, attendant charges, physiotherapy, personal medical appliances, blood, oxygen, etc. during stay at the hospital (within the reference period of last 365 days) –

whether made available by the hospital or procured from outside. Expenses on transportation of the patient to or from the hospital are excluded, and so is expenditure on food.

Statement 4.3 and Figures 4.5 and 4.6 shows the average medical expenditure incurred during stay at hospital per case of hospitalisation (excluding childbirth) by district. In most districts, urban areas exhibit higher medical expenses than rural areas, with Ernakulam showing the highest disparity, where urban costs average ₹33,329 compared to ₹24,365 in rural areas, leading to a combined average of ₹30,526. Wayanad stands out with the lowest average expenditure across all categories, with nearly identical costs in rural and urban areas (₹7,488 and ₹7,536, respectively). Pathanamthitta has the highest pooled average expenditure at ₹23,967, driven by relatively high costs in both rural and urban areas. In contrast, Kottayam is one of the few districts where rural expenditure (₹18,422) exceeds urban expenditure (₹15,072). Overall, the average medical expenditure across all districts is ₹19,126, with urban areas averaging significantly higher at ₹22,440 compared to ₹16,693 in rural areas.

Statement 4.3: Average medical expenditure (₹) for treatment per hospitalisation case during stay at hospital over last 365 days.

District	Average total Medical expenditure for Treatment (₹) per case		
	Rural	Urban	All
Kasargod	23406	31334	26071
Kannur	22386	23641	23109
Wayanad	7488	7536	7489
Kozhikode	15733	18054	17231
Malappuram	13048	18289	14649
Palakkad	13813	26874	15853
Thrissur	20973	21516	21276
Ernakulam	24365	33329	30526
Idukki	13394	15758	13523
Kottayam	18422	15072	17434
Alappuza	16857	22017	19606
Pathanamthitta	23876	24852	23967
Kollam	19659	19547	19611
Thiruvananthapuram	11313	18212	14425
All	16693	22440	19126

Figure 4.5. District wise average total medical expenditure (₹) for treatment per hospitalization case (EC) during stay at hospital over last 365 days in Rural Urban

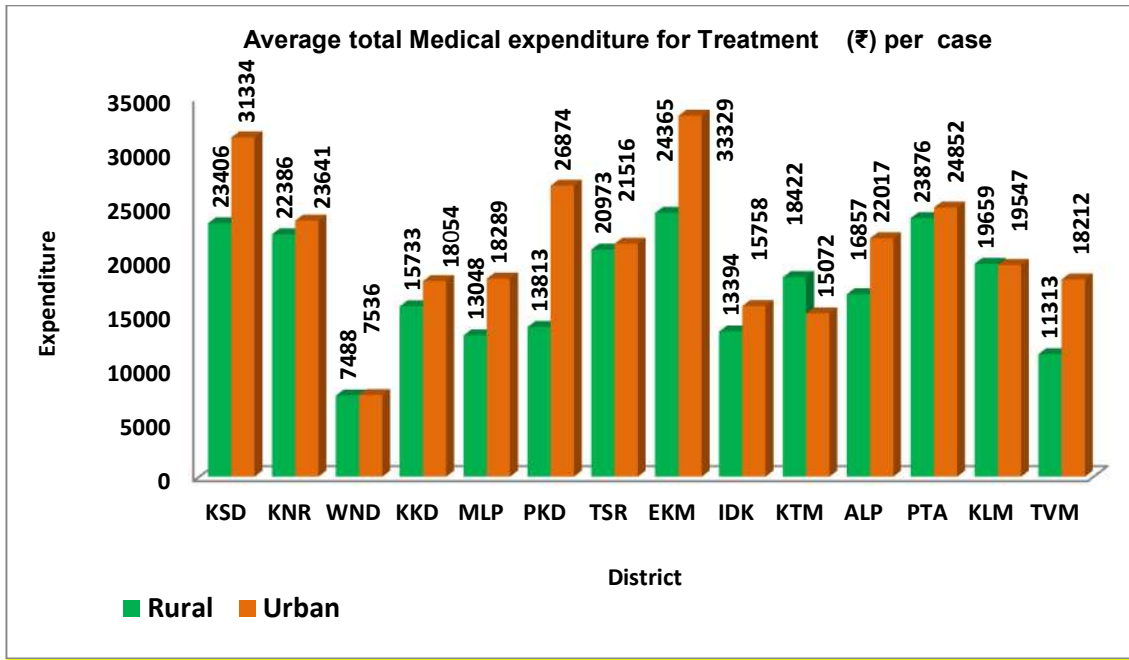
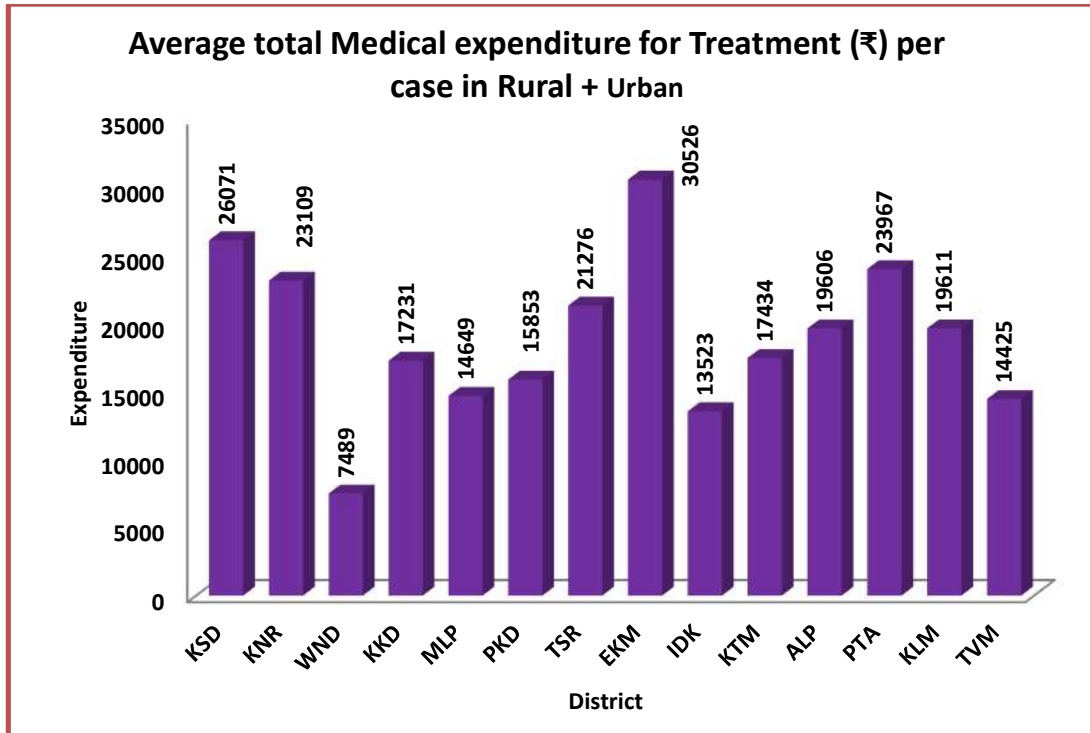


Figure 4.6. District wise average total medical expenditure (₹) for treatment per hospitalization case (EC) during stay at hospital over last 365 days in Rural+Urban



4.4 Expenditure on non-hospitalisation in a 15-day period

District wise average medical expenditure incurred per spell of ailment not involving admission to hospital is presented in statement 4.4 and Figures 4.7 and 4.8. Overall, the average expenditure across all districts is ₹451, reflecting the general cost of medical treatment within this period. Notably, Ernakulam has the highest combined average expenditure at ₹644, while Wayanad reports the lowest at ₹271. When analyzing the rural-urban differences, urban areas typically have higher medical expenditures than rural areas, with the overall urban average being ₹491 compared to ₹419 in rural areas. Kozhikode demonstrates a significant urban-rural disparity, with urban expenditure (₹740) substantially higher than rural (₹424). In contrast, districts like Pathanamthitta exhibit the opposite trend, where rural expenditure (₹543) far exceeds urban expenditure (₹182). Some districts, such as Kannur and Malappuram, show minimal differences between rural and urban expenditures, indicating a more uniform cost structure across sectors.

Statement 4.4: District wise average total Medical expenditure (₹) for treatment per ailing person during a period of 15 days.

Average total Medical expenditure (₹) for treatment per ailing person during a period of 15 days by district			
District	Rural	Urban	All
Kasargod	348	545	418
Kannur	363	362	362
Wyanad	268	334	271
Kozhikode	424	740	630
Malappuram	427	437	431
Palakkad	622	571	609
Thrissur	358	386	374
Eranakulam	803	550	644
Idukki	431	720	447
Kottayam	218	269	234
Alappuza	558	620	588
Pathanamthitta	543	182	518
Kollam	370	295	337
Thiruvananthapuram	350	532	445
All	419	491	451

Figure 4.7: District wise average total Medical expenditure (₹) for treatment per ailing person during a period of 15 days (Rural + Urban)

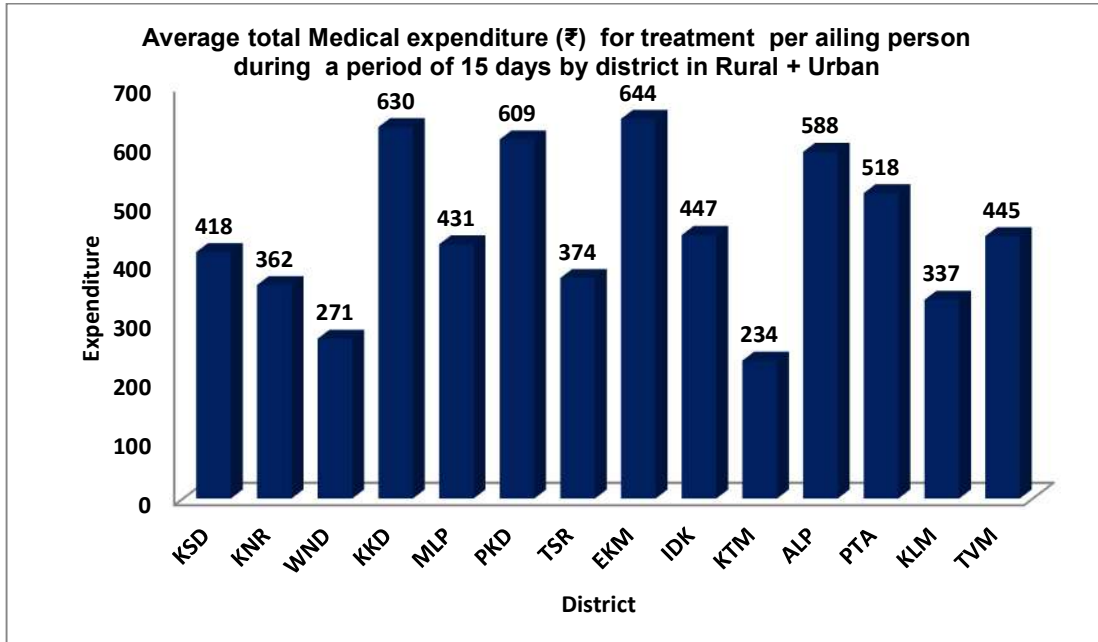
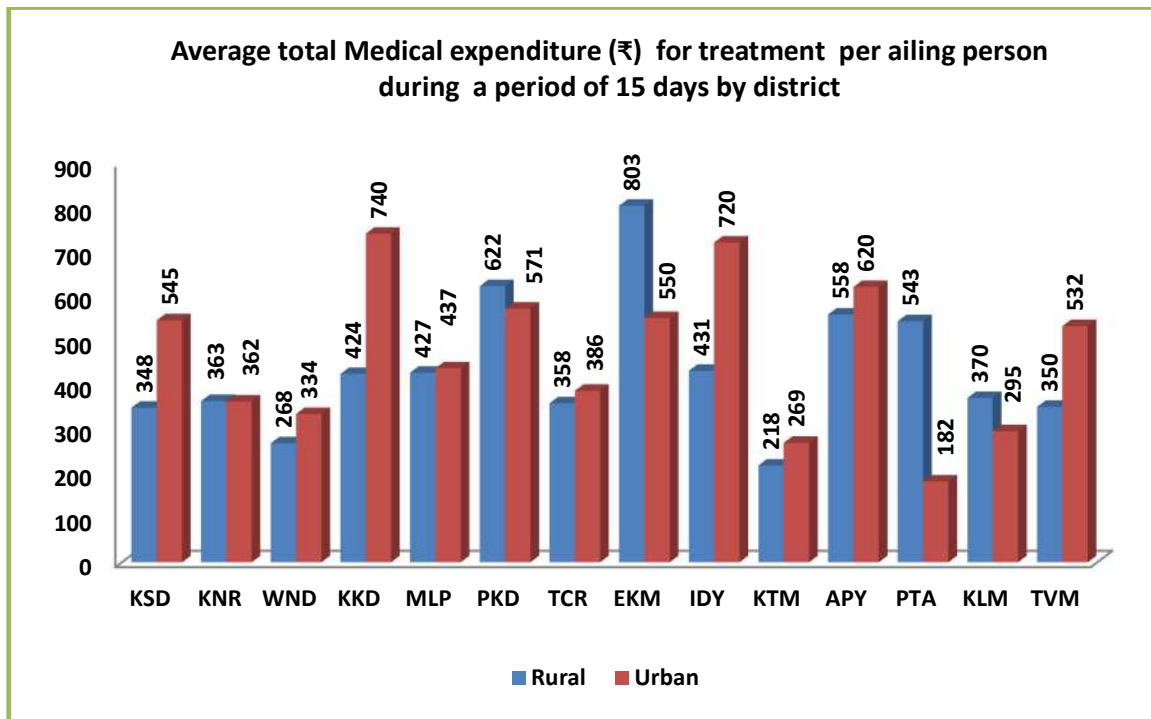


Figure 4.8: District wise average total Medical expenditure (₹) for treatment per ailing person during a period of 15 days by sector.



Appendix - A

Detailed Tables

Table 1A : Percentage distribution of population by age-group for each gender

Kerala	Rural						Pooled data		
	Gender			Estimated no (00)			Sample		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
1	2	3	4	5	6	7	8	9	10
0-4	6.3	6	6.2	5254	5152	10406	1203	1202	2405
5-9	7.1	5.9	6.5	5889	5080	10969	761	723	1484
10-14	7.6	6	6.8	6311	5181	11492	614	563	1177
5-14	14.7	12	13.3	12201	10261	22462	1375	1286	2661
15-19	8.5	6.8	7.7	7049	5868	12917	626	560	1186
20-24	7.8	7.4	7.6	6513	6297	12810	623	909	1532
25-29	7.6	7.4	7.5	6335	6318	12654	774	1090	1864
15-29	23.9	21.6	22.7	19897	18483	38380	2023	2559	4582
30-34	7.3	6.3	6.8	6089	5367	11456	968	812	1780
35-39	5.7	7.4	6.5	4734	6319	11053	744	657	1401
40-44	5.7	7.8	6.8	4712	6702	11414	518	616	1134
30-44	18.7	21.5	20.1	15535	18387	33922	2230	2085	4315
45-49	7.2	8.3	7.7	5957	7069	13026	541	714	1255
50-59	13.9	14.8	14.4	11570	12653	24223	1173	1527	2700
45-59	21.1	23	22.1	17527	19722	37248	1714	2241	3955
60-64	5.3	5.2	5.2	4383	4427	8809	566	584	1150
65-69	4.2	4.6	4.4	3469	3910	7378	456	459	915
70-74	2.8	2.2	2.5	2300	1925	4225	273	236	509
75-79	1.6	1.6	1.6	1308	1348	2656	154	179	333
60-79	13.8	13.6	13.7	11460	11609	23068	1449	1458	2907
80 & above	1.5	2.4	1.9	1210	2051	3261	163	241	404
70 & above	5.8	6.2	6	4818	5324	10141	590	656	1246
60 & above	15.2	15.9	15.6	12669	13660	26329	1612	1699	3311
Total	100	100	100	83083	85665	168748	10157	11072	21229
est.no.of person (00)	83083	85665	168748	XX	XX	XX	XX	XX	XX
sam.no.of person	10157	11072	21229	XX	XX	XX	XX	XX	XX

Table 1B : Percentage distribution of population by age-group for each gender

Kerala	Urban						Pooled data		
	Gender			Estimated no (00)			Sample		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
1	2	3	4	5	6	7	8	9	10
0-4	6.7	5.2	5.9	4365	3752	8117	1018	990	2008
5-9	7.1	6	6.5	4640	4331	8971	658	611	1269
10-14	7.7	7	7.4	5033	5058	10115	569	539	1109
5-14	14.8	13	13.9	9673	9389	19086	1227	1150	2378
15-19	9.1	7.7	8.4	5947	5585	11532	555	527	1082
20-24	7.5	7.8	7.6	4888	5621	10509	532	819	1351
25-29	7.1	6.6	6.8	4633	4780	9413	633	917	1550
15-29	23.7	22.1	22.9	15468	15986	31455	1720	2263	3983
30-34	6.9	7.3	7.1	4489	5296	9784	749	744	1493
35-39	6.8	7.8	7.4	4466	5645	10111	622	634	1256
40-44	6.5	7.5	7	4237	5452	9688	482	543	1025
30-44	20.2	22.7	21.5	13191	16393	29584	1853	1921	3774
45-49	6.8	8.5	7.7	4427	6154	10582	458	630	1088
50-59	13.8	12.6	13.2	9032	9126	18158	974	1230	2204
45-59	20.6	21.1	20.9	13459	15280	28740	1432	1860	3292
60-64	4.8	4.9	4.9	3160	3566	6726	462	498	960
65-69	4	4.2	4.1	2601	3040	5641	388	387	775
70-74	2.7	2.6	2.7	1748	1910	3658	254	206	460
75-79	1.4	2.1	1.7	884	1493	2377	126	167	293
60-79	12.9	13.8	13.4	8393	10010	18402	1230	1258	2488
80 & above	1	2.1	1.6	672	1493	2165	108	192	300
70 & above	5.1	6.8	6	3304	4896	8201	488	565	1053
60 & above	13.9	15.9	15	9065	11503	20567	1338	1450	2788
Total	100	100	100	65222	72303	137549	8588	9634	18223
est.no.of person (00)	65222	72303	137549	XX	XX	XX	XX	XX	XX
sam.no.of person	8588	9634	18223	XX	XX	XX	XX	XX	XX

Table 1C : Percentage distribution of population by age-group for each gender

Kerala	All Pooled data								
	Gender			Estimated No. (00)			Sample		
	Male	Female	Person	Male	Female	Person	Male	Female	Person
1	2	3	4	5	6	7	8	9	10
0-4	6.5	5.6	6	9619	8904	18523	2221	2192	4413
5-9	7.1	6	6.5	10529	9411	19940	1419	1334	2753
10-14	7.6	6.5	7.1	11345	10238	21607	1183	1102	2286
5-14	14.7	12.4	13.6	21874	19650	41548	2602	2436	5039
15-19	8.8	7.2	8	12996	11453	24448	1181	1087	2268
20-24	7.7	7.5	7.6	11401	11918	23319	1155	1728	2883
25-29	7.4	7	7.2	10969	11098	22067	1407	2007	3414
15-29	23.8	21.8	22.8	35366	34469	69835	3743	4822	8565
30-34	7.1	6.7	6.9	10578	10663	21240	1717	1556	3273
35-39	6.2	7.6	6.9	9200	11964	21164	1366	1291	2657
40-44	6	7.7	6.9	8949	12153	21102	1000	1159	2159
30-44	19.4	22	20.7	28726	34780	63506	4083	4006	8089
45-49	7	8.4	7.7	10384	13223	23607	999	1344	2343
50-59	13.9	13.8	13.8	20602	21779	42381	2147	2757	4904
45-59	20.9	22.2	21.5	30986	35002	65988	3146	4101	7247
60-64	5.1	5.1	5.1	7542	7993	15535	1028	1082	2110
65-69	4.1	4.4	4.3	6069	6950	13019	844	846	1690
70-74	2.7	2.4	2.6	4048	3835	7883	527	442	969
75-79	1.5	1.8	1.6	2193	2841	5033	280	346	626
60-79	13.4	13.7	13.5	19852	21618	41470	2679	2716	5395
80 & above	1.3	2.2	1.8	1882	3544	5426	271	433	704
70 & above	5.5	6.5	6	8122	10220	18342	1078	1221	2299
60 & above	14.7	15.9	15.3	21734	25162	46896	2950	3149	6099
Total	100	100	100	148305	157968	306297	18745	20706	39452
est.no.of person (00)	148305	157968	306297	XX	XX	XX	XX	XX	XX
sam.no.of person	18745	20706	39452	XX	XX	XX	XX	XX	XX

Table 2A: Number per thousand persons reporting ailments during the last 15 days by age-group

District: 01 Kasaragod		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	126	39	93	218	31
15-44	37	65	47	263	45
45-59	355	491	402	973	96
60+	695	793	723	1097	129
all	208	225	214	2552	301

Table 2B : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 02 Kannoor		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	170	101	126	538	97
15-44	87	58	69	605	93
45-59	206	341	282	1274	170
60+	490	570	539	1683	249
all	192	203	199	4100	609

Table 2C : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 03 Wayanadu		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	155	94	152	197	32
15-44	140	95	138	531	54
45-59	319	185	314	502	80
60+	684	421	667	591	94
all	242	161	239	1820	260

Table 2D: Number per thousand persons reporting ailments during the last 15 days by age-group

District: 04 Kozhikkodu		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	123	102	108	769	114
15-44	107	107	107	1527	147
45-59	342	345	344	2206	211
60+	497	585	549	2008	301
all	216	202	207	6511	773

Table 2E : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 05 Malappuram			Pooled data		
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	116	134	122	1186	202
15-44	83	89	85	1407	197
45-59	311	320	314	1886	286
60+	790	635	737	2208	344
all	191	187	190	6687	1029

Table 2F: Number per thousand persons reporting ailments during the last 15 days by age-group

District: 06 Palakkadu			Pooled data		
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	13	37	18	94	27
15-44	30	34	31	373	55
45-59	141	296	167	813	87
60+	385	363	379	1476	171
all	98	136	106	2756	340

Table 2G : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 07 Thrissur			Pooled data		
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	203	204	203	877	180
15-44	193	219	209	1854	252
45-59	580	418	486	2429	336
60+	781	797	790	3384	474
all	405	363	380	8544	1242

Table 2H : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 08 Ernakulam			Pooled data		
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	189	150	162	924	74
15-44	52	72	66	868	97
45-59	383	259	303	2318	212
60+	647	502	546	2911	349
all	266	200	221	7020	732

Table 2I : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 09 Idukki		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	107	89	106	183	56
15-44	153	185	155	724	85
45-59	341	540	347	891	118
60+	567	609	569	956	160
all	256	309	259	2755	419

Table 2J: Number per thousand persons reporting ailments during the last 15 days by age-group

District: 10 Kottayam		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	278	301	283	854	142
15-44	226	199	219	1559	177
45-59	475	591	509	1899	201
60+	760	780	767	2993	340
all	397	444	411	7304	860

Table 2K : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 11 Alappuzha		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	254	145	205	770	79
15-44	142	146	144	1228	121
45-59	322	292	305	1337	170
60+	679	623	651	2493	309
all	304	267	285	5828	679

Table 2L : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 12 Pathanamthitta		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	41	78	45	65	15
15-44	72	36	68	262	37
45-59	237	107	227	571	83
60+	536	370	518	1218	153
all	216	146	209	2116	288

Table 2M : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 13 Kollam		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	49	171	109	484	64
15-44	80	74	77	845	86
45-59	284	376	320	2086	208
60+	642	607	629	2601	266
all	233	228	231	6016	624

Table 2N : Number per thousand persons reporting ailments during the last 15 days by age-group

District: 14 Thiruvananthapuram		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	65	45	54	309	59
15-44	101	89	94	1429	147
45-59	413	385	399	3105	318
60+	727	735	731	3888	429
all	268	247	257	8731	953

Table 2O : Number per thousand persons reporting ailments during the last 15 days by age-group

All Kerala		Pooled data			
Age-group	Rural	Urban	All	No. of ail. Persons	
				Estd(00)	Sample
0-14	125	124	124	7468	1172
15-44	100	102	101	13473	1593
45-59	328	350	338	22290	2576
60+	633	625	629	29507	3768
all	239	236	237	72739	9109

Table :3 Average Total Medical expenditure for treatment per hospitalisation case(EC) during stay at hospital over last 365 days by district

District	Average total Medical expenditure for Treatment (Rs) per case			Case of hospitalisation	
	Rural	Urban	All	Estd (00)	Sample
Kasargod	23406	31334	26071	668	236
Kannur	22386	23641	23109	1741	571
Wyanad	7488	7536	7489	801	218
Kozhikode	15733	18054	17231	2448	652
Malappuram	13048	18289	14649	2563	842
Palakkad	13813	26874	15853	2080	523
Thrissur	20973	21516	21276	2590	780
Eranakulam	24365	33329	30526	3111	663
Idukki	13394	15758	13523	1318	362
Kottayam	18422	15072	17434	2500	539
Alappuza	16857	22017	19606	2197	456
Pathanamthitta	23876	24852	23967	869	243
Kollam	19659	19547	19611	2843	515
Thiruvananthapuram	11313	18212	14425	3274	720
All	16693	22440	19126	29003	7320

Table 4 : Average total medical expenditure (₹) for treatment per ailing person during a period of 15 days by district

Pooled Data					
District	Average total medical expenditure for treatment (₹) per ailing person			No of ailing Persons	
	Rural	Urban	All	Estimated	Sample
Kasargod	348	545	418	2552	301
Kannur	363	362	362	4100	609
Wyanad	268	334	271	1820	260
Kozhikode	424	740	630	6511	773
Malappuram	427	437	431	6687	1029
Palakkad	622	571	609	2756	340
Thrissur	358	386	374	8544	1242
Eranakulam	803	550	644	7025	733
Idukki	431	720	447	2755	419
Kottayam	218	269	234	7304	860
Alappuza	558	620	588	5828	679
Pathanamthitta	543	182	518	2116	288
Kollam	370	295	337	6016	624
Thiruvananthapuram	350	532	445	8731	953
All	419	491	451	72744	9110

Appendix - B

Relative Standard Error (RSE)

Table 1: RSE Number per thousand persons reporting ailments during the last 15 days by age-group

Districts	Rural	Urban	All
Kasargod	8.93	3.22	6.28
Kannur	13.45	7.69	7.00
Wyanad	10.20	4.72	9.89
Kozhikode	11.97	7.04	8.00
Malappuram	8.25	11.01	7.00
Palakkad	14.61	14.87	11.75
Thrissur	5.87	5.73	4.48
Eranakulam	7.43	8.40	6.05
Idukki	17.20	12.72	16.51
Kottayam	4.95	17.15	7.15
Alappuza	10.38	6.91	6.10
Pathanamthitta	7.16	38.86	7.26
Kollam	8.93	8.21	6.60
Thiruvananthapuram	5.80	11.28	6.60
All	2.62	3.22	2.10

Table 2: RSE Average total medical expenditure (₹) for treatment per hospitalisation case (EC) during stay at hospital over last 365 days by district

District	Rural	Urban	All
Kasargod	18.24	18.46	18.42
Kannur	21.84	9.90	10.40
Wyanad	10.56	5.63	10.04
Kozhikode	30.69	12.11	13.63
Malappuram	11.90	14.30	9.73
Palakkad	11.05	18.80	15.73
Thrissur	11.94	7.73	6.98
Eranakulam	18.24	15.41	12.81
Idukki	10.67	27.53	10.55
Kottayam	17.38	13.38	13.37
Alappuza	20.07	19.54	14.36
Pathanamthitta	22.20	9.62	20.16
Kollam	16.40	16.27	11.39
Thiruvananthapuram	9.48	14.51	9.70
ALL	5.27	6.36	4.27

Table 3: RSE Average total medical expenditure (₹) for treatment per ailing person during a period of 15 days by district

District	Rural	Urban	All
Kasargod	14.84	29.22	16.07
Kannur	16.20	13.57	10.88
Wyanad	14.01	31.45	13.55
Kozhikode	9.91	13.92	9.97
Malappuram	6.05	14.94	6.31
Palakkad	13.76	10.16	12.05
Thrissur	10.56	8.05	7.55
Eranakulam	10.73	10.01	7.94
Idukki	16.81	35.77	16.27
Kottayam	7.62	14.76	7.17
Alappuza	14.08	17.09	16.65
Pathanamthitta	37.31	0.00	36.59
Kollam	11.01	4.82	7.17
Thiruvananthapuram	8.44	13.88	9.45
ALL	5.72	6.02	4.17

Appendix – C

Sample Design and Estimation Procedure

Sample Design and Estimation Procedure

1. Introduction

1.1 The National Sample Survey, set up by the Government of India in 1950 to collect socioeconomic data employing scientific sampling methods, conducted its 75th round during the period July 2017 - June 2018. Apart from “Household Social Consumption: Health”, two other subjects were covered: “Household Consumer Expenditure” and “Household Social Consumption: Education”.

2. Outline of Survey Programme

2.1 **Geographical coverage:** The survey covered the whole of the Indian Union, except for those villages in Andaman and Nicobar Islands which are difficult to access.

2.2 **Period of survey:** The survey period was of one year duration starting on 1st July 2017 and ending on 30th June 2018.

2.3 **Schedules of enquiry:** The following schedules of enquiry were canvassed:

Sch.0.0	List of households
Sch.1.0	Household consumer expenditure
Sch.25.0	Household social consumption: health
Sch.25.2	Household social consumption: education

2.4 **Participation of States:** In this round all the States and Union Territories except Andaman & Nicobar Islands, Chandigarh, Dadra & Nagar Haveli and Lakshadweep participated by surveying a matching “State sample” of the same size, or larger than the “Central sample” for their State/UT surveyed by the Central government officials. The sample sizes of the States/UTs relative to the Central sample (“extent of matching”) were as shown in the table below.

State/UT	Extent of matching
Nagaland (U)	triple
Andhra Pradesh, Manipur, Telangana, Chhattisgarh	double
Gujarat, Maharashtra (U)	one and a half
Remaining States/ UTs	equal

3. Sample Design

3.1 **Outline of sample design:** A stratified multi-stage design was adopted for the 75th round survey. The first stage units (FSU) were the Census villages (*panchayat* wards for Kerala) in the rural sector and Urban Frame Survey (UFS) blocks in the urban sector. (Henceforth the term “village” will refer to *panchayat* wards in case of Kerala.) The ultimate stage units in both sectors

were the households. In the case of large FSUs, the selection of two sub-FSUs (hamlet-groups in villages and sub-blocks in UFS blocks) was an intermediate stage of sampling.

3.2 Sampling Frame for First Stage Units: For the rural areas, the list of 2011 Census villages constituted the sampling frame. For the urban sector, the list of UFS blocks (UFS 2007-12) was the sampling frame.

3.3 Stratification

3.3.1 Within each district of a State/UT, two basic strata were formed: (i) a rural stratum comprising all rural areas of the district and (ii) an urban stratum comprising all urban areas of the district. If, however, within the urban areas of a district, there were million-plus cities (towns with population 10 lakhs or more as per Population Census 2011), each such city formed a separate basic urban stratum and the remaining urban area of the district, another basic urban stratum.

3.3.2 In the case of rural areas of Nagaland another special stratum was formed within the State consisting of all the villages which were difficult to access.

3.4 Sub-stratification

3.4.1 **Rural sector:** If r was the sample size allocated for a rural stratum, the number of sub-strata formed was $r/4$. The villages within a district as per frame were first arranged in ascending order of population. Then cut-off points were marked off in this list demarcating sub-strata 1 to $r/4$ in such a way that each sub-stratum comprised a group of villages of the arranged frame and had more or less the same population.

3.4.2 **Urban sector:** Each urban stratum was divided into two parts – an “affluent part” consisting of UFS blocks identified as “affluent area” and a “non-affluent part” consisting of the remaining UFS blocks within the stratum. Samples were allocated to affluent and non-affluent parts in proportion to the total number of households in the UFS block with double weightage to affluent part. If u was the sample size for an urban stratum, the number of sub-strata formed was $u/4$. Out of the $u/4$ sub-strata the stratum nos. “01” and “02” were allotted to the ‘affluent area’ and the remaining sub-stratum numbers viz., “03”, “04” ... were allotted to the non-affluent UFS block. If $u/4$ was more than 1, two or more sub-strata were formed. This was done by first arranging the towns in ascending order of number of households in the town as per the latest UFS phase. From this arranged frame of UFS blocks of all the towns/ million-plus cities of a stratum, $u/4$ sub-strata were formed in such a way that each sub-stratum had more or less the same number of households. This procedure was followed separately for affluent and non-affluent parts of the town for allocation of samples.

3.5 Total sample size (FSUs): 14300 FSUs were allotted for the central sample at all-India level.

3.6 Allocation of total sample to States and UTs: The total number of sample FSUs were allocated to the States and UTs in proportion to population as per Census 2011 subject to a minimum sample allocation to each State/UT.

3.7 Allocation of State/ UT level sample to rural and urban sectors: State/ UT level sample size was allocated between two sectors in proportion to population as per Census 2011 with 1.5 weightage to urban sector depending on population share. A minimum of 16 FSUs (minimum 8 each for rural and urban sector separately) was allocated to each State/ UT.

3.8 Allocation to strata and sub-strata: Within each sector of a State/UT, the sample size was allocated to the different strata/sub-strata in proportion to the population as per Census 2011. Allocations at stratum level were adjusted to multiples of 4 with a minimum sample size of 4. Allocation for each sub-stratum was 4.

3.9 Sub-rounds: The survey period of the round was divided into four sub-rounds of three months' duration each as follows:

sub-round 1:	July - September 2017
sub-round 2:	October - December 2017
sub-round 3:	January - March 2018
sub-round 4:	April - June 2018

3.9.1 To ensure uniform spread of sample villages FSUs over the entire period of survey, equal numbers of sample villages/blocks (FSUs) were allotted to each of these four sub-rounds, and attempts were made to survey each of the FSUs during the sub-round to which it was allotted. However, because of the arduous field conditions, this restriction was not strictly enforced in Andaman and Nicobar Islands, Lakshadweep, Ladakh region (Leh and Kargil districts) of Jammu & Kashmir and rural areas of Arunachal Pradesh and Nagaland.

3.10 Selection of FSUs

3.10.1 For the rural sector, from each sub-stratum, sample villages were selected with Probability Proportional to Size With Replacement (PPSWR), size being the population of the village as per Census 2011.

3.10.2 For the urban sector, from each stratum/sub-stratum, FSUs were selected by Probability Proportional to Size With Replacement (PPSWR), size being the number of households of the UFS block.

3.10.3 Both rural and urban samples were drawn in the form of two independent sub-samples.

3.11 Hamlet-group/ sub-block formation and selection

3.11.1 **Criterion for hamlet-group/sub-block formation:** After identification of the boundaries of the FSU, it was first determined whether listing was to be done in the whole sample FSU or not. In case the population of the selected FSU was found to be 1200 or more, it was divided into a suitable number (say, D) of parts or sub-FSUs of more or less equal population – the parts being called “hamlet-groups” in case of villages and “sub-blocks” in case of urban blocks. D was determined as shown in the table.

approx. present popn. of sample FSU	no. of sub- FSUs formed
less than 1200	1*
1200 to 1799	3
1800 to 2399	4
2400 to 2999	5
3000 to 3599	6
...and so on	
*no sub-FSUs formed	

3.11.2 For rural areas of Himachal Pradesh, Sikkim, Andaman & Nicobar Islands, Uttarakhand (except the four districts Dehradun, Nainital, Hardwar and Udham Singh Nagar), Punch, Rajouri, Udhampur, Reasi, Doda, Kishtwar, Ramban, Ladakh region (Leh and Kargil districts) of Jammu and Kashmir and Idukki district of Kerala, the number of hamlet-groups formed was as follows:

approx. present popn. of sample village	no. of hamlet- groups formed
less than 600	1*
600 to 899	3
900 to 1199	4
1200 to 1499	5
1500 to 1799	6
....and so on	
*no hamlet-groups formed	

3.11.3 **Selection of hamlet-groups/ sub-blocks to form the frame for sampling of households:** Once a large FSU had been divided into the required number of sub-FSUs (hamlet-groups or sub-blocks), two of these sub-FSUs were selected in the following manner – the one with the largest population was purposively selected, and another was randomly selected from the remaining sub-FSUs by Simple Random Sampling (SRS). Listing and selection of the households was done independently in the two selected sub-FSUs.

3.12 Formation of second-stage strata (SSS) and allocation of households for Sch.25.0

3.12.1 Households listed in the selected FSU/sub-FSU were stratified into three second-stage strata (SSS). The composition of the second-stage strata and the numbers of households planned to be surveyed from different SSS were as follows:

SSS	composition of SSS	number of households surveyed	
		in an FSU without hg/sb formation	in each sub-FSU where sub-FSUs were formed
SSS 1	households having at least one child of age less than 1 year	2	1
SSS 2	from the remaining, households with at least one member (including deceased former member) hospitalised during last 365 days	4	2
SSS 3	other households	2	1

3.13 **Selection of households:** From each SSS, the sample households were selected by SRSWOR.

4. Estimation Procedure

4.1 Notations

s = subscript for s^{th} stratum

t = subscript for t^{th} sub-stratum

m = subscript for sub-sample ($m = 1, 2$)

i = subscript for i^{th} FSU [village (*panchayat* ward)/ block]

d = subscript for a hamlet-group/ sub-block ($d = 1, 2$)

j = subscript for j^{th} second stage stratum in an FSU/hg/sb

k = subscript for k^{th} sample household within an FSU/ hg/sb

D = total number of hg's/ sb's formed in the sample FSU

$D^* = 0$ if $D = 1$

$= (D - 1)$ for FSUs with $D > 1$

Z = total size of a sub-stratum (sum of sizes for all the FSUs of a sub-stratum)

z = size of sample FSU used for selection.

n = number of sample FSUs surveyed including 'uninhabited' and 'zero cases' but excluding casualty for a particular sub-sample and sub-stratum.

H = total number of households listed in a second-stage stratum of an FSU / hamlet-group or sub-block of sample FSU

h = number of households surveyed in a second-stage stratum of an FSU / hamlet-group or sub-block of sample FSU

x, y = observed value of characteristics x, y under estimation

\hat{X}, \hat{Y} = estimate of population total X, Y for the characteristics x, y

In terms of the above symbols,

$y_{stmidjk}$ = observed value of the characteristic y for the k^{th} household of the j^{th} second stage stratum of the d^{th} sub-FSU of the i^{th} FSU belonging to the m^{th} sub-sample for the t^{th} sub-stratum of the s^{th} stratum.

However, for ease of understanding, a few symbols have been suppressed in following paragraphs where they are obvious.

4.2 Estimation (for Sch. 25.0) of aggregates for a specific sub-sample and sub-stratum

4.2.1 Rural/ Urban

(i) For j -th second-stage stratum of a sub-stratum:

$$\hat{Y}_j = \frac{Z}{n_j} \sum_{i=1}^{n_j} \frac{1}{z_i} \left[\frac{H_{i1j}}{h_{i1j}} \sum_{k=1}^{h_{i1j}} y_{i1jk} + D_i^* \times \frac{H_{i2j}}{h_{i2j}} \sum_{k=1}^{h_{i2j}} y_{i2jk} \right]$$

(ii) For all second-stage strata combined:

$$\hat{Y} = \sum_j \hat{Y}_j$$

4.3 Overall estimate of an aggregate for a sub-stratum

Overall estimate for aggregates for a sub-stratum (\hat{Y}_{st}) based on two sub-samples in a sub-stratum is obtained as:

$$\hat{Y}_{st} = \frac{1}{2} \sum_{m=1}^2 \hat{Y}_{stm}$$

4.4 Overall estimate of an aggregate for a stratum

Overall estimate for a stratum (\hat{Y}_s) is obtained as

$$\hat{Y}_s = \sum_t \hat{Y}_{st}$$

4.5 Overall Estimate of Aggregates at State/UT/all-India level

The overall estimate \hat{Y} at the State/ UT/ all-India level is obtained by summing the stratum estimates \hat{Y}_s over all strata belonging to the State/ UT/ all-India.

4.6 Estimates of Ratios

Let \hat{Y} and \hat{X} be the overall estimates of the aggregates Y and X for two characteristics y and x respectively at the State/ UT/ all-India level.

Then the combined ratio estimate (\hat{R}) of the ratio ($R = \frac{Y}{X}$) will be obtained as

$$\hat{R} = \frac{\hat{Y}}{\hat{X}}$$

4.7 **Estimates of Error:** The estimated variances of the above estimates will be:

4.7.1 **For aggregate \hat{Y} :**

$$V\hat{a}r(\hat{Y}) = \sum_s V\hat{a}r(\hat{Y}_s) = \sum_s \sum_t V\hat{a}r(\hat{Y}_{st})$$

where $V\hat{a}r(\hat{Y}_{st})$ is given by

$$V\hat{a}r(\hat{Y}_{st}) = \frac{1}{4} (\hat{Y}_{st1} - \hat{Y}_{st2})^2$$

where \hat{Y}_{st1} and \hat{Y}_{st2} are the estimates for sub-sample 1 and sub-sample 2 respectively for stratum s and sub-stratum t.

4.7.2 **For ratio \hat{R} :**

$$M\hat{S}E(\hat{R}) = \frac{1}{4\hat{X}^2} \sum_s \sum_t \left[(\hat{Y}_{st1} - \hat{Y}_{st2})^2 + \hat{R}^2 (\hat{X}_{st1} - \hat{X}_{st2})^2 - 2\hat{R} (\hat{Y}_{st1} - \hat{Y}_{st2}) (\hat{X}_{st1} - \hat{X}_{st2}) \right]$$

4.7.3 **Estimates of Relative Standard Error (RSE):**

$$R\hat{S}E(\hat{Y}) = \frac{\sqrt{V\hat{a}r(\hat{Y})}}{\hat{Y}} \times 100$$

$$R\hat{S}E(\hat{R}) = \frac{\sqrt{M\hat{S}E(\hat{R})}}{\hat{R}} \times 100$$

5. Multipliers

The formulae for multipliers (of sample households for Sch. 25.0) at stratum/sub-stratum/second-stage stratum level for a sub-sample are given below:

formula for multipliers	
hg / sb 1	hg / sb 2
$\frac{Z_{st}}{n_{stmj}} \times \frac{1}{z_{stmi}} \times \frac{H_{stmi1j}}{h_{stmi1j}}$	$\frac{Z_{st}}{n_{stmj}} \times \frac{1}{z_{stmi}} \times D_{stmi}^* \times \frac{H_{stmi2j}}{h_{stmi2j}}$
j = 1, 2, 3	

Note:

- (i) For estimating any characteristic for any domain not specifically considered in sample design, indicator variable may be used.
- (ii) Multipliers have to be computed on the basis of information available in the listing schedule irrespective of any misclassification observed between the listing schedule and detailed enquiry schedule.

Appendix

Schedule 25.0

RURAL		*
URBAN		

**GOVERNMENT OF INDIA
NATIONAL SAMPLE SURVEY OFFICE
SOCIO-ECONOMIC SURVEY**

CENTRAL		*
STATE		

**SEVENTY FIFTH ROUND: JULY 2017 - JUNE 2018
SCHEDULE 25.0: HOUSEHOLD SOCIAL CONSUMPTION: HEALTH**

[0] descriptive identification of sample household			
1. state/UT.:		5. hamlet name:	
2. district:		6. investigator unit no. /block no. :	
3. sub-district/tehsil/town:*		7. name of head of household:	
4. village name:		8. name of informant:	

[1] identification of sample household							
item no.	item	code			item no.	item	code
1.	srl. no. of sample FSU				6.	sample household number	
2.	round number	7		5	7.	serial number of informant (as in column 1 of block 4)	
3.	schedule number	2	5	0	8.	response code	
4.	sample hg/sb number				9.	survey code	
5.	second-stage stratum number				10.	reason for substitution of original household (code)	

CODES FOR BLOCK 1

item 8: response code: informant: *co-operative and capable -1, co-operative but not capable -2, busy -3, reluctant -4, others -9.*

item 9: survey code: *original -1, substitute -2, casualty -3.*

item 10: reason for substitution of original household: *informant busy -1, members away from home -2, informant non-cooperative -3, others -9.*

* tick mark (√) may be put in the appropriate place

[2] particulars of field operations										
sl. no.	item	Field Investigator (FI) / Junior Statistical Officer (JSO)				Field Officer (FO)/ Senior Statistical Officer (SSO)				
(1)	(2)	(3)				(4)				
1.(a)	(i) name (block letters)									
	(ii) code									
	(iii) signature									
1.(b)	(i) name (block letters)									
	(ii) code									
	(iii) signature									
2.	date(s) of:	DD	MM	YY	DD	MM	YY			
	(i) survey/ inspection									
	(ii) receipt									
	(iii) scrutiny									
	(iv) despatch									
3.	number of additional sheet(s) attached									
4.	total time taken to canvass the schedule by the team of investigators (FI/JSO) (in minutes) [no decimal point]									
5.	number of investigators (FI/JSO) in the team who canvassed the schedule									
6.	whether any remark has been entered by FI/JSO/supervisory officer (yes-1, no-2)	(i) in block 12/13								
		(ii) elsewhere in the schedule								

[12] remarks by investigator (FI/JSO)

[13] comments by supervisory officer(s)

[3] household characteristics										
1. household size						8. type of latrine usually used (code)				
2. whether the household paid major share for childbirth expenses for any non-household female member(s) during last 365 days? (yes-1, no-2)						if code in item 8 is 01-09	9. access to latrine: <i>exclusive use-1, common use of households in the building-2, public/community latrine-3, others-9</i>			
3. principal industry (NIC-2008)	description:						10. how many members use the latrine?			
	code (5-digit)					11. major source of drinking water (code)				
4. principal occupation (NCO-2004)	description:					12. arrangement of garbage disposal (code)				
	code (3-digit)					13. primary source of energy for cooking during the last 30 days (code)				
						14. was there a sudden outbreak of communicable disease (see list* below) in the community afflicting at least one household member during last 365 days? (yes-1, no-2)				
5. household type (code)						15. amount of medical insurance premium paid for household members during last 365 days (Rs.)				
6. religion (code)						16. household's usual monthly consumer expenditure (Rs.)				
7. social group (code)										

CODES FOR BLOCK 3

item 5: household type: for rural areas: self-employed in agriculture -1, self-employed in non-agriculture - 2; regular wage/salary earning in agriculture- 3, regular wage/salary earning in non-agriculture- 4, casual labour in agriculture - 5, casual labour in non-agriculture -6; others-9.

for urban areas: self-employed -1, regular wage/salary earning - 2, casual labour -3, others -9

item 6: religion: Hinduism -1, Islam -2, Christianity -3, Sikhism-4, Jainism -5, Buddhism -6, Zoroastrianism -7, others -9

item 7: social group: Scheduled Tribes (ST)-1, Scheduled Castes (SC) -2, Other Backward Classes (OBC) -3, Others- 9

item 8: type of latrine usually used: flush/ pour flush latrine to: piped sewer system-01, septic tank-02, pit latrine -03, elsewhere (open area /street/yard/plot/drainage ditch, not known etc.)-04;

Pit latrine: ventilated improved pit/ biogas latrine -05, pit latrine with slab-06, pit latrine without slab/open pit-07, twin pit /composting latrine-08, others-09, no latrine facility / use open space or field-10

item 11: major source of drinking water: bottled water – 01, piped water in dwelling/premises/yard – 02, piped water outside -03, tube-well/borewell (inside or outside premises)-04, protected well (inside or outside premises)-05, tanker/truck/drum(supplied through container)-06, protected spring/pond etc.for drinking purpose -07, Community RO Plant-08, others – 09, all unprotected source (river/canal, spring, pond, well etc.) - 10

item 12: arrangement of garbage disposal: by Panchayet/Municipality/Corporation-1, by resident/group of residents-2, others-9, no arrangement-3

item 13: primary source of energy for cooking: firewood and chips-01, LPG-02, other natural gas -03, dung cake-04, kerosene-05, coke/coal-06, gobar gas-07, other biogas -08, charcoal-10, electricity(incl. generated by solar or wind power generators) -11, others-19, no cooking arrangement-12

***list of diseases (for item 14):** Malaria; Viral Hepatitis/Jaundice; Acute Diarrhoeal Diseases/Dysentery; Dengue fever; Chikungunya; Measles; Acute Encephalitis Syndrome; and others (Typhoid, Hookworm Infection, Filariasis, Tuberculosis, etc.)

[4] demographic particulars of household members

sl. no.	name of member	relation to head (code)	gender (code)	age (yrs)	marital status (code)	genl. education (code)	usual principal activity status (code)	during last 365 days				whether suffering from any chronic ailment (yes -1, no -2)	whether suffered/suffering from any other chronic ailment? (besides on the day before the date of survey (yes -1, no -2))		whether covered by any scheme for health exp. support (code)	reporting of columns 14-16 (self -1, proxy-2)	
								if 1 in col. 9, no. of times hospitalised (yes-1, no-2)	whether pregnant* (yes-1, no-2)	(if 1 in col. 11) whether paid major share for child-birth expenses# (code)	whether suffered from any communicable disease (code)		any time during last 15 days (yes-1, no-2)	(15)			(16)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
A: usual members																	
B: female members from other households for whom the major share of expenses on child birth during last 365 days, was borne by the household member(s)																	
81			2							1	1						
82			2							1	1						
83			2							1	1						
84			2							1	1						

* for female member(s) of age 15 to 49 years

childbirth expenses excluding expenses on pre/post natal care

CODES FOR BLOCK 4

col. 3: relation to head: self - 1, spouse of head - 2, married child - 3, spouse of married child - 4, unmarried child - 5, grandchild - 6, father/mother/father-in-law/mother-in-law - 7, brother/sister/brother-in-law/sister-in-law/other relatives - 8, servant/employees/other non-relatives - 9

col 4 gender: male-1, female-2, transgender-3

col. 6: marital status: never married - 1, currently married - 2, widowed - 3, divorced/separated- 4

col. 7: general education: not literate -01,

literate without any schooling -02,

literate without formal schooling: through NFEC -03, literate through TLC/AEC -04, others -05;

literate with formal schooling: below primary -06, primary -07, upper primary/middle -08, secondary -10, higher secondary -11, diploma /certificate course (upto secondary)-12, diploma/certificate course(higher secondary)-13, diploma/certificate course(graduation & above) -14, graduate -15, post graduate and above -16

col. 8: usual principal activity status:

worked in h.h. enterprise (self-employed): -11 worked as casual wage labour: in public works -41 attended domestic duties and was also engaged in own account worker -93

worked in h.h. enterprise (self-employed): -12 worked as casual wage labour: free collection of goods (vegetables, roots, firewood, cattle feed, etc.), sewing, tailoring, weaving, etc. for household use -51

worked as helper in h.h. enterprise (unpaid family worker) -21 did not work but was seeking and/or available for -81 renters, pensioners, remittance recipients, etc. -94

worked as regular salaried/ wage employee -31 attended educational institution -91 not able to work due to disability -95

attended domestic duties only -92 others (including begging, prostitution, etc.) -97

col. 12: whether household paid major share for childbirth expenses: yes-1, no-2, pregnancy continuing-3

col. 13: whether suffered from any communicable disease :

suffered from: Malaria-1, Viral Hepatitis/Jaundice-2, Acute Diarrhoeal Diseases/Dysentery-3, Dengue fever - 4 Chikungunya-5, Measles-6, Acute Encephalitis syndrome-7, others -9 (Typhoid, Hookworm Infection, Filariasis, Tuberculosis etc.) not suffered -8

col. 17: whether covered by any scheme for health expenditure support: government sponsored (e.g. RSBY, Arogyasri, etc.)-1, government/PSU as an employer (e.g. CGHS, reimbursement from govt. etc.)-2, employer supported (other than govt./PSU) health protection (e.g.ESIS) -3, arranged by household with insurance companies-4, others-9, not covered-5

<i>[5] particulars of former household members who died during the last 365 days</i>									
srl. no.	name of deceased member	gender (code)	age at death (years)	whether medical attention received before death (yes-1, no-2)	whether hospitalised at least once during last 365 days (yes-1, no-2)	if 1 in col. 6, no. of times hospitalised	reason for non-hospitalisation just before death (code)	if 2 in col. 3 and age 15-49 years in col.4	
								whether pregnant any time during last 365 days (yes-1, no-2)	if 1 in col. 9, time of death (code)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
91									
92									
93									
94									
95									

**for female members of 4B this block should not be filled in*

CODES FOR BLOCK 5:

col. 3: gender: male -1, female-2, transgender-3

col. 8: reason for non-hospitalisation: hospital care was not considered satisfactory-1, admission to hospital was not done as doctor/medical attendant was not available-2, ailment was not considered serious enough-3, financial constraints-4, due to transportation problem-5, patient did not want to be hospitalised-6, patient died before taking to hospital-7, others-9

col.10: time of death: deaths related to pregnancy: during pregnancy -1, during delivery -2, during abortion -3, within 6 weeks of delivery/ abortion -4, deaths due to other causes -9

[6] particulars of medical treatment received as in-patient of a medical institution during the last 365 days						
1.	sr1. no. of the hospitalisation case	1	2	3	4	5
2.	srl. no. of member (as in col. 1, block 4A/5 & 4B) hospitalised					
3.	age (years) (as in col.5, block 4A & 4B/ col.4, block 5)					
4.	nature of ailment (code list on pages 14-15)*					
5.	nature of treatment (code)					
6.	type of medical institution (code)					
7.	if code is 2 or 3 in item 6 , reason for not availing govt./public hospital					
8.	type of ward (free -1, paying general -2, paying special -3)					
9.	when admitted (code)					
10.	when discharged (code)					
11.	duration of stay in hospital (days)					
details of medical services received (not received -1; received: free -2, partly free -3, on payment -4)						
12.	surgery					
13.	medicine					
14.	X-ray/ECG/EEG/Scan					
15.	other diagnostic tests					
16.	whether treated on medical advice before hospitalisation (yes -1, no-2)					
if 1 in item 16	17.	nature of treatment (code)				
	18.	level of care (code)				
	19.	duration of treatment (days)				
20.	whether treatment on medical advice continued after discharge from hospital (yes -1, no-2)					
if 1 in item 20	21.	nature of treatment (code)				
	22.	level of care (code)				
	23.	duration of treatment (days)				

*for female members of 4B ailment codes 87, 88 or 89 are only applicable

CODES FOR BLOCK 6

items 5, 17, 21: nature of treatment:

<i>Allopathy</i>	-1	<i>Homoeopathy</i>	-3
<i>Indian system of medicine</i>		<i>Yoga & Naturopathy</i>	-4
<i>(desi dawai: ayurveda, unani or siddha)</i>	-2	<i>other</i>	-9

item 6: type of medical institution:

<i>Govt./public hospital</i>	-1	<i>Charitable/Trust/NGO run hospital</i>	-2
<i>(incl. HSC/PHC/CHC etc.)</i>		<i>private hospital</i>	-3

item 7: reason for not availing govt./public hospital:

<i>required specific services not available</i>	-1	<i>quality satisfactory but involves long waiting</i>	-4
<i>available but quality not satisfactory/doctor</i>	-2	<i>financial constraint</i>	-5
<i>not available</i>		<i>preference for a trusted doctor/hospital</i>	-6
<i>quality satisfactory but facility too far</i>	-3	<i>others</i>	-9

item 9: when admitted: during last 15 days - 1, 16 days to 365 days ago - 2, more than 365 days ago - 3

item 10: when discharged: not yet -1, during last 15 days -2, 16 days to 365 days ago -3

items 18 & 22: level of care:

<i>Govt./public hospital</i>	-1	<i>private hospital</i>	-3
<i>(incl. HSC/PHC/CHC etc.)</i>		<i>private doctor/clinic</i>	-4
<i>Charitable/Trust/NGO run hospital</i>	-2	<i>informal health care provider</i>	-5

[7] expenses incurred during the last 365 days for treatment of members as in-patient of medical institution						
1.	srl. no. of the hospitalisation case (as in item 1, block 6)	1	2	3	4	5
2.	srl. no. of member hospitalised (as in item 2, block 6)					
3.	age (years) (as in item 3, block 6)					
4.	whether any medical service provided free (fully/partly) (yes: govt./public -1, pvt.(incl. Charitable/NGO/Trust run hospital) - 2, both-3; no - 4)					
expenditure for treatment during stay at hospital (in whole number of Rs.)						
5.	package component (Rs.)					
non-package component (Rs.)		#####				
6.	doctor's/ surgeon's fee (hospital staff/ other specialists)					
7.	medicines					
8.	diagnostic tests					
9.	bed charges					
10.	other medical expenses (attendant charges, physio-therapy, personal medical appliances, blood, oxygen, etc.)					
11.	medical expenditure (Rs.): total (items 5-10)					
transport for patient (Rs.)						
12.	transport for patient (Rs.)					
13.	other non-medical expenses incurred by the household (registration fee, food, transport for others, expenditure on escort, lodging charges if any, etc.) (Rs.)					
14.	expenditure (Rs.): total (items 11-13)					
15.	total amount reimbursed by medical insurance company or employer (Rs.)					
16.	major source of finance for expenses (code)					
17.	2 nd most important source of finance for expenses (code)					
18.	place of hospitalisation (code)					
19.	if code is 5 in item 18, then state code (page 15)					
20.	loss of household income, if any, due to hospitalisation (Rs.)					

CODES FOR BLOCK 7**item 16 & 17 : source of finance for expenses:**

household income/ savings	-1	sale of physical assets	-3
borrowings	-2	contributions from friends and relatives	-4
		other sources	-9

item 18:

place of hospitalisation:			
same district (rural area)	-1	within state different district (rural area)	-3
same district (urban area)	-2	within state different district (urban area)	-4
		other state	-5

[8] particulars of spells of ailment of household members during the last 15 days (hospitalisation and non-hospitalisation cases)							
1.	srl. no. of spell of ailment		1	2	3	4	5
2.	srl. no. of member reporting ailment (as in col.1 of block 4A/5)						
3.	age (years) (as in col.5, block 4A/ col.4, block 5)						
no. of days within the ref. period	4.	ill					
	5.	on restricted activity					
	6.	confined to bed					
7.	nature of ailment (code list on pages 14-15)						
8.	whether chronic (yes-1, no-2)						
9.	status of ailment (code)						
10.	total duration of ailment (days)						
11.	nature of treatment (code)						
12.	whether hospitalised (yes-1, no-2)						
13.	if 1-4 or 9 in item 11 , whether treatment taken on medical advice (<i>yes -1, no -2</i>)						
if 1 in item 13	14.	level of care (code)					
	15.	if 2-5 in item 14 , reason for not availing govt. sources (code)					
if 2 in item 13	16.	reason for not seeking medical advice (code)					
	17.	whom consulted (code)					

**for female members of 4B this block should not be filled in*

CODES FOR BLOCK 8

item 9: status of ailment:

started more than 15 days ago and is continuing -1 started within 15 days and is continuing -3
started more than 15 days ago and has ended -2 started within 15 days and has ended -4

item 11: nature of treatment:

Allopathy -1 Homoeopathy -3 no treatment -5
Indian system of medicine
(desi dawai: ayurveda, unani or siddha) -2 Yoga & Naturopathy -4
Other -9

item 14: level of care:

Govt./public hospital -1 private hospital -3
(incl. HSC/PHC/CHC etc.) private doctor/clinic -4
Charitable/Trust/NGO run hospital -2 informal health care provider -5

item 15: reason for not availing govt. sources:

required specific services not available -1 quality satisfactory but involves long waiting -4
available but quality not satisfactory -2 financial constraint -5
quality satisfactory but facility too far -3 preference for a trusted doctor/hospital -6
others -9

item 16: reason for not seeking medical advice:

no medical facility available in the neighbourhood -1 ailment not considered serious enough -4
facility too expensive -2 familial/religious belief -5
cannot afford to wait long due to domestic/economic engagement -3 others -9

item 17: whom consulted: self/ other household member/ friend - 1, medicine shop - 2, others - 9

[9] expenses incurred during the last 15 days for treatment of members (not as in-patient of medical institution)						
1.	srl. no. of spell of ailment (as in item 1, block 8)	1	2	3	4	5
2.	srl. no. of member reporting ailment (as in col.2 of block 8)					
3.	age (years) (as in item 3, block 8)					
4.	whether any medical service provided free (fully/partly) (yes: govt./public -1, pvt.(incl. Charitable/NGO/Trust run hospital) - 2, both-3: no - 4)					
details of medical services received (not received - 1; received: free - 2, partly free - 3, on payment - 4)						
5.	surgery					
6.	medicine received (AYUSH)					
7.	medicine received (other than AYUSH)					
8.	X-ray/ECG/EEG/Scan					
9.	other diagnostic tests					
medical expenditure for treatment (in whole number of Rs.)						
10.	doctor's/ surgeon's fee (hospital staff/ other specialists)					
11.	medicines: AYUSH					
12.	medicines: other than AYUSH					
13.	diagnostic tests					
14.	other medical expenses (attendant charges, physiotherapy, personal medical appliances, blood, oxygen, etc.)					
15.	medical expenditure (Rs.): total (items 10-14)					
16.	transport for patient (Rs.)					
17.	other expenses incurred by the household (registration fee, food, transport for others, expenditure on escort, etc.) (Rs.)					
18.	expenditure (Rs.): total (items 15-17)					
19.	total amount reimbursed by medical insurance company or employer (Rs.)					
20.	major source of finance for expenses (code)					
21.	place of treatment (code)					
22.	if code is 5 in item 21, then state code (page 15)					
23.	loss of household income, if any, due to treatment (Rs.)					

**for female members of 4B this block should not be filled in*

CODES FOR BLOCK 9

item 20: major source of finance for expenses:

household income/ savings	-1	sale of physical assets	-3
borrowings	-2	contributions from friends and relatives	-4
		other sources	-9

item 21: place of treatment:

same district (rural area)	-1	within state different district (rural area)	-3
same district (urban area)	-2	within state different district (urban area)	-4
		other state	-5

[10a] particulars of economic independence and state of health of persons aged 60 years and above						
1.	srl. no. of member (as in col. 1, block 4A)					
2.	age (years) (as in col. 5, block 4A)					
3.	number of sons living					
4.	number of daughters living					
5.	state of economic independence (code)					
6.	if 1 in item 5 , no. of dependents					
7.	if 2 or 3 in item 5 , person financially supporting aged person (code)					
8.	place of stay (owned house (self/spouse)-1, other's house-2)					
9.	living arrangement (code)					
10.	physical mobility (code)					
11.	if 1 or 2 in item 10 , person helping (<i>household member -1, other than household member -2, none -3</i>)					
12.	own perception about current state of health (code)					
13.	own perception about change in state of health (code)					

CODES FOR BLOCK 10a

item 5: *state of economic independence: not dependent on others - 1, partially dependent on others - 2, fully dependent on others - 3*

item 7: *person financially supporting aged person: spouse -1, own children -2, grandchildren -3, others -9*

Item 9: *living arrangement:*

living with spouse and other members - 1

living with spouse only - 2

living without spouse but with: children -3

other relations - 4

non-relations - 5

living alone: not as an inmate of old age home -6

living alone: as an inmate of old age home -7

item 10: *physical mobility: physically immobile: confined to bed - 1, confined to home - 2, able to move outside but only in a wheelchair - 3; physically mobile - 4*

item 12: *own perception about current state of health: excellent/very good - 1, good/fair - 2, poor - 3*

item 13: *own perception about change in state of health: compared to previous year: much better - 1, somewhat better - 2, nearly the same - 3, somewhat worse - 4, worse - 5*

[10b] expenditure on immunisation, if any, during the last 365 days and status of immunisation of children as on date of survey (age 0-5 years)						
1.	srl. no. as in block 4					
2.	age in months					
for item 3 to 14 ever received immunisation (yes-1, no-2)						
3.	BCG					
4.	Oral Polio Vaccine (OPV) doses	birth dose				
5.		OPV1				
6.		OPV 2				
7.		OPV 3				
8.		booster dose				
9.	DPT /Penta-valent doses	DPT-1/ Pentavalent-1				
10.		DPT-2/ Pentavalent -2				
11.		DPT-3/ Pentavalent -3				
12.		booster dose				
13.	measles					
14.	other immunisation*					
15.	information source of immunisation (code)					
16.	source of most immunisation (code)					
17.	expenditure on immunisation, if any, during last 365 days					
18.	visit to anganwari center during last 30 days (in days)					

*Hepatitis, Japanese Encephalitis(JE), Inactivated Polio Vaccine (IPV), Vitamin.-A etc.

CODES FOR BLOCK 10b

item 15: information source of immunisation: Mother and Child Protection Card (MCPC)/ Immunisation card-1, others-2

item 16: source of most immunisation :

<i>from HSC/Anganwari centre</i>	-1	<i>from private hospital</i>	-5
<i>from PHC/dispensary/CHC/mobile medical unit</i>	-2	<i>from private doctor/clinic</i>	-6
<i>from govt./ public hospital</i>	-3	<i>no vaccination was received</i>	-7
<i>from charitable/trust/NGO run hospital</i>	-4		

[11] particulars of pre-natal and post-natal care for women of age 15-49 years who were pregnant during the last 365 days

sl. no. (as in block 4/5)	age (years) (as in block 4/5)	serial no. of pregnancy (1/2)	pre-natal care				delivery			post-natal (42 days after delivery) care (if 2-4 in col. 11)			visit to angan-wari centre (AWC) during last 30 days (in days)				
			whether received tetanus toxoid vaccine during pregnancy (yes-1, no-2)	whether consumed Iron and Folic Acid (IFA) during pregnancy (yes-1, no-2)	if 1 in col. 5, for how many days IFA were consumed?	major source of receiving pre-natal care (code)	if 1-7 in col. 7		outcome of pregnancy (code)	place of delivery/abortion attended by (code)	if 2-7 in col. 11			major source of receiving post-natal care (code)	if 1-7 in col. 15		
							nature of pre-natal care	no. of pre-natal care visits*			expenditure incurred during last 365 days on pre-natal care (Rs.)	expenditure on delivery was attended by at home (Rs.)				expenditure on post-natal care (code)	expenditure incurred during last 365 days on post-natal care (Rs.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
A. usual members (with code 1 in col.11 of block 4A/code 1 in col. 9 block 5)																	
B: members from other households who are included as household member for childbirth only (from Block 4B with serial no. 81 onwards)																	
75																	
*incl. all visits to any of the sources																	

CODES FOR BLOCK 11

cols. 7, 15: major source of receiving pre-natal/post-natal care:

- 1 from private hospital
- 2 from private doctor/clinic
- 3 from informal health care provider
- 4 no care was received

cols. 8, 16: nature of pre-natal / post-natal care: AYUSH-1, non-AYUSH-2, both-3

col. 11: outcome of pregnancy; pregnancy continuing-1 (for 11A only); mother alive & live birth -2; mother alive & stillbirth -3; mother alive & abortion-4; mother died & live birth -5; mother died & stillbirth -6; mother died & abortion-7; others (e.g. mother died before delivery/abortion for non-pregnancy related causes)-9

col. 12: place of delivery/abortion:

- 1 in charitable/trust/NGO run hospital
- 2 in private hospital
- 3 at home

col. 13:

delivery was attended by: doctor/nurse-1, ANM-2, Dai-3, others-9

CODES FOR “NATURE OF AILMENT”**Block 6: item 4; Block 8: item 7**

Reported Diagnosis and/or Main Symptom	Code	Reported Diagnosis and/or Main Symptom	Code
INFECTIOUS		EYE	
Fever with loss of consciousness or altered consciousness	01	Discomfort/pain in the eye with redness or swellings/ boils	27
Malaria	02	Cataract	28
Fever due to DIPHTHERIA, WHOOPING COUGH	03	GLAUCOMA	29
All other fevers (Includes typhoid, Fever with rash/ eruptive lesions and fevers of unknown origin, all specific fevers that do not have a confirmed diagnosis)	04	Decreased vision (chronic) NOT including where decreased vision is corrected with glasses	30
TUBERCULOSIS	05	Others (including disorders of eye movements – strabismus, nystagmus, ptosis and adnexa)	31
Filariasis	06	EAR	
Tetanus	07	Earache with discharge/bleeding from ear/ infections	32
HIV/AIDS	08	Decreased hearing or loss of hearing	33
Other sexually transmitted diseases	09	CARDIO-VASCULAR	
Jaundice	10	HYPERTENSION	34
Diarrheas/ dysentery/ increased frequency of stools with or without blood and mucus in stools	11	Heart disease: Chest pain, breathlessness	35
Worms infestation	12	RESPIRATORY	
CANCERS		Acute upper respiratory infections (cold, runny nose, sore throat with cough, allergic colds included)	36
CANCERS (known or suspected by a physician) and occurrence of any growing painless lump in the body	13	Cough with sputum with or without fever and NOT diagnosed as TB	37
BLOOD DISEASES		Bronchial asthma/ recurrent episode of wheezing and breathlessness with or without cough over long periods or known asthma)	38
Anaemia (any cause)	14	GASTRO-INTESTINAL	
Bleeding disorders	15	Diseases of mouth/teeth/gums	39
ENDOCRINE, METABOLIC, NUTRITIONAL		Pain in abdomen: Gastric and peptic ulcers/ acid reflux/ acute abdomen	40
DIABETES	16	Lump or fluid in abdomen or scrotum	41
Under-nutrition	17	Gastrointestinal bleeding	42
Goitre and other diseases of the thyroid	18	SKIN	
Others (including obesity)	19	Skin infection (boil, abscess, itching) and other skin disease	43
PSYCHIATRIC & NEUROLOGICAL		MUSCULO-SKELETAL	
Mental retardation	20	Joint or bone disease/ pain or swelling in any of the joints, or swelling or pus from the bones	44
Mental disorders	21	Back or body aches	45
Headache	22	INJURIES	
Seizures or known epilepsy	23	Accidental injury, road traffic accidents and falls	52
Weakness in limb muscles and difficulty in movements	24	Accidental drowning and submersion	53
Stroke/ hemiplegia/ sudden onset weakness or loss of speech in half of body	25		
Others including memory loss, confusion	26		
GENITO-URINARY			
Any difficulty or abnormality in urination	46		
Pain the pelvic region/reproductive tract infection/ Pain in male genital area	47		

Reported Diagnosis and/or Main Symptom	Code	Reported Diagnosis and/or Main Symptom	Code
Change/irregularity in menstrual cycle or excessive bleeding/pain during menstruation and any other gynaecological and andrological disorders incl. male/female infertility	48	Burns and corrosions	54
		Poisoning	55
		Intentional self-harm	56
		Assault	57
OBSTETRIC		Contact with venomous/harm-causing animals and plants	58
Pregnancy with complications before or during labour (abortion, ectopic pregnancy, hypertension, complications during labour)	49	Symptom not fitting into any of above categories	59
Complications in mother after birth of child	50	Could not even state the main symptom	60
Illness in the newborn/ sick newborn	51	Childbirth(for both live birth and stillbirth)	
		normal delivery	87
		Caesarean	88
		other types of delivery	89

CODES FOR "STATE"

Block 7: item 19; Block 9: item 22

<i>State Name</i>	<i>Code</i>	<i>State Name</i>	<i>Code</i>	<i>State Name</i>	<i>Code</i>
Andhra Pradesh	28	Karnataka	29	Tamil Nadu	33
Arunachal Pradesh	12	Kerala	32	Tripura	16
Assam	18	Madhya Pradesh	23	Telangana	36
Bihar	10	Maharashtra	27	Uttar Pradesh	09
Chhattisgarh	22	Manipur	14	Uttarakhand	05
Delhi	07	Meghalaya	17	West Bengal	19
Goa	30	Mizoram	15	A & N Islands	35
Gujarat	24	Nagaland	13	Chandigarh	04
Haryana	06	Odisha	21	Dadra & Nagar Haveli	26
Himachal Pradesh	02	Punjab	03	Daman & Diu	25
Jammu & Kashmir	01	Rajasthan	08	Lakshadweep	31
Jharkhand	20	Sikkim	11	Puducherry	34



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