

# THE NATIONAL SAMPLE SURVEY

NUMBER 49

REPORT ON MORBIDITY



सत्यमेव जयते

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# THE NATIONAL SAMPLE SURVEY

NUMBER 49

## REPORT ON MORBIDITY

*This 'Report on Morbidity' was prepared by the Indian Statistical Institute, Calcutta, and is being published in the form in which it was submitted to the Government of India and Government are not responsible for the views expressed in the Report.\**

### CHAPTER ONE

#### INTRODUCTION

1.1. The importance of obtaining reliable information of the health of the people is obvious. No such information is, however, currently available for India as a whole. The information on morbidity that is available is mainly related to the diseases which are made notifiable to the Health Authorities; but even among these a large proportion escapes notice. As stated in the Report of the Health Survey and Development Committee set up by the Government of India in 1943, "there are considerable variations in the number of communicable diseases which are notifiable in the different provinces. There do not exist, even in the large cities, adequate facilities for ensuring that some of these diseases, for example, tuberculosis, will be notified in sufficient numbers to ensure that a substantial proportion of the actual occurrences will be brought on record"<sup>1</sup>. Attempts have been made from time to time by public health organisations to estimate the prevalence of certain specific diseases, such as tuberculosis, malaria, leprosy, etc. Such surveys, however, require trained medical personnel and laboratory facilities for bacteriological and clinical examination and cannot, for limitation of resources, be adopted for general health surveys in India.

1.2. Two comparatively comprehensive surveys to assess the morbidity and medical care were conducted, the first by the All-India Institute of Hygiene and Public Health in Singur, which is a small rural area in West Bengal, in 1944<sup>2</sup> and the other by the Indian Statistical Institute in West Bengal in 1955<sup>3</sup>. The West

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\*The Draft Report (No. D. 63) was submitted to the Government of India in March 1960 and the revised Draft in October 1960.

<sup>1</sup>Report of the Health Survey and Development Committee, 1-4, Government of India, 1946.

<sup>2</sup>R. B. Lal and S. C. Seal (1949): *General Health Survey in Singur Health Centre, 1944*, Government of India.

<sup>3</sup>S. J. Poti, M. V. Raman, S. Biswas and B. Chakravarty (1959): *Pilot Health Survey in West Bengal, 1955*, *Sankhyā*, 21, pp. 141-204.

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Bengal Health Survey was in the nature of a pilot study to evolve suitable methodology for the collection of morbidity and medical care statistics.

1.3. In the National Sample Survey (NSS), however, with a field organisation covering the whole of India, information on morbidity began to be collected from the seventh round (October 1953-March 1954) onwards as an exploratory measure to supply the methodology for future studies on a large scale. Information on morbidity was collected in the NSS up to the thirteenth round (September 1957-May 1958) but due to the emphasis on other aspects of information, the sampling intensity for morbidity had necessarily to be very small and also the analysis of the data could not be taken up due to lack of resources.

1.4. This report gives the results of the examination of the morbidity data obtained in the NSS from the seventh<sup>1</sup>, eleventh, twelfth and thirteenth rounds<sup>2</sup>: the rates given are the first available for India as a whole in the rural and the urban sectors.

1.5. The NSS data used in this report were analysed as usual by the independent, inter-penetrating samples for every NSS round concerned, although for convenience of presentation only the combined results have sometimes been shown. The advantages of the technique of the analysis by the inter-penetrating samples, each of which furnishes an independent and equally valid estimate of the items under analysis and gives directly an estimate of the margin of uncertainty involved, have been explained earlier<sup>3</sup>. As will be seen from the tables, the independent sample agreement was generally good. Even where the relative divergence between the figures for the independent samples is high, the result may, however, be adequate for framing policy decisions. The adequacy of an estimate, obtained from a sample survey, should relate to the purpose for which the estimate would be used and not merely on the basis of the sampling error. The permissible error could, on the other hand, be defined by the limits of the estimates for which the same policy decision holds.

1.6. General details of the NSS sample designs were given in NSS Report Number 1, on the first round<sup>4</sup> and in NSS Report Number 5. The sample designs for the NSS rounds covered have been described and the procedure of estimation given in Appendix II. Very broadly the design for the rural sector in the seventh round has been to divide the 2,400 odd tehsils into 240 strata on the criteria of contribution to consumer expenditure and geographical contiguity; two sample tehsils were selected with replacement directly from each stratum and then two sample villages from each sample tehsil, with probability proportional to Census 1951 popula-

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<sup>1</sup>The results of the NSS seventh round morbidity have been submitted in NSS Draft Report No. 47. The results are quoted here for comparison and some new results are added.

<sup>2</sup>Only the urban sector was surveyed in the thirteenth round for morbidity data.

<sup>3</sup>P. C. Mahalanobis (1946): Recent experiments in statistical sampling in Indian Statistical Institute, *JRSS*, 109 (4); D. B. Lahiri (1954): *Technical paper on some aspects of the development of sample design*, NSS Report Number 5, Government of India.

<sup>4</sup>Government of India, December 1952.

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tion/area. From the ninth to the thirteenth round, however, the sampling design was two-stage stratified in the rural sector : rural India was divided into 72 strata, comprising one district or a group of geographically contiguous districts within the same 'Natural Division', the sample villages being selected from each stratum with probability proportional to Census 1951 population/area and with replacement. The required numbers of sample households (ultimate stage units) were selected from the list of current households, prepared by the investigators, within the sample villages systematically with a random start. For the urban sector, the sample design in the NSS seventh round was three-stage stratified, the towns or cities forming the first-stage units (selected with probability proportional to Census 1951 population and with replacement), and the urban blocks the second-stage units (selected with probability proportional to the Census 1951 population and with replacement); from the NSS eleventh to the thirteenth round, the design was two-stage stratified in urban areas, the urban blocks (first-stage units) being selected directly in the different strata with equal probability and with replacement. As in the villages, the required numbers of sample households were selected from the list of current households, prepared by the investigators, within the urban blocks systematically with a random start.

1.7. The number of sample villages, towns, urban blocks and households covered in the NSS rounds is given in Table (1.1).

1.8. The number of sample villages or urban blocks differed in the different rounds, and also, due to shifts of emphasis on the subject of enquiry, the sampling intensity of households within the sample village or urban block differed ; this resulted in the total number of sample households varying over the rounds.

TABLE (1.1): NUMBER OF SAMPLE VILLAGES, TOWNS, URBAN BLOCKS AND SAMPLE HOUSEHOLDS COVERED IN THE NSS ROUNDS

round	survey period	rural		urban		
		sample villages	sample households	sample towns	sample blocks	sample households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. seventh	October 1953- March 1954	954	8,235	57	441	1,720
2. eleventh	August 1956- January 1957	1,848	7,161	336	584	2,809
3. twelfth	February 1957- July 1957	1,848	5,544	337	584	1,731
4. thirteenth	September 1957- May 1958	a	a	547	1,168	11,680

<sup>a</sup>Morbidity data were not collected in the rural areas in the thirteenth round.

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1.9. The facsimile of the morbidity block canvassed in the NSS seventh round only is given below :

serial number	sex	age (years)	sickness			
			marital status	industrial status	cause of sickness	duration of sickness (weeks)
(1)	(2)	(3)	(4)	(5)	(6)	(7)

1.10. This basic format continued up to the NSS thirteenth round; in the twelfth and thirteenth rounds, the duration of sickness (in days) during the preceding 30 days was collected and in the latter round, the item of information on marital status was dropped.

1.11. It may be mentioned that a *type-study* is proposed to be conducted in four States—Madras, Maharashtra, Rajasthan and West Bengal—each with two centres, rural and urban in October 1960—September 1961. The objective is to examine the effects of different probes and definitions, recall periods and of proxy interviews on morbidity rates.



## CHAPTER TWO

### SUMMARY OF FINDINGS

2.1. The results of morbidity data, collected in the seventh, eleventh, twelfth and thirteenth (urban sector only) rounds of the NSS as an exploratory measure, have been presented in this report. The text includes the results at the all-India rural and urban levels; results for the rural population zones and the urban population size classes of towns have been shown in the detailed tables in Appendix I.

2.2. *Categories of Sickness* : About 53 per cent (twelfth round) to 72 per cent (eleventh round) of the sicknesses began and ended within the reference month in the rural sector. In the urban sector, the proportion of sicknesses beginning and ending within the month varied from 58-59 per cent in the seventh and twelfth rounds to 83 per cent in the eleventh round. The proportion of sicknesses beginning before the reference period and continuing on the date of survey was 12 per cent in the seventh round and 8-9 per cent in the eleventh and twelfth rounds in the rural sector; in the urban sector the proportion was 13 per cent in the seventh and thirteenth rounds but 7 per cent in the eleventh and twelfth rounds.

2.3. *Incidence rate* : The incidence rate has been defined as the number of sicknesses beginning during the reference month per thousand population. In the rural sector the highest incidence rate was returned in the seventh round (49/1000) and the lowest in the eleventh round (26/1000). In the urban sector the highest incidence rate was returned in the twelfth round (53/1000), and the lowest (32/1000) in the eleventh round. Males and the gainfully employed generally showed higher incidence rates than the females and persons not gainfully employed. The incidence rate showed a dip from age group 0-6 to age group 7-16 and then continued to rise with increasing age.

2.4. *Prevalence rate* : The monthly prevalence rate was defined as the number of cases of sickness experienced during the reference month per thousand population. In the rural sector, the highest prevalence rate was returned in the seventh round (65/1000) and the lowest in the eleventh round (32/1000); in the urban sector the highest prevalence rate was noted in the twelfth round (81/1000) and the lowest in the eleventh round (36/1000). Males generally showed higher prevalence rates as compared to females. In the rural sector, the twelfth round excepted, the gainfully employed showed higher prevalence rates than others; in the urban sector the gainfully employed showed higher prevalence rate only in the seventh round. The prevalence rate in the different age groups followed a pattern similar to that of the incidence rate, showing a decrease in the age group 7-16 and an increase with increasing age.

2.5. The average duration of sickness (in weeks) was defined as the total number of sickness-weeks divided by the number of (spells of) sicknesses, for any

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category of sickness. The average duration was calculated in two ways—(i) by restricting the sicknesses beginning before the reference period (whether ending or continuing within the reference period) to 13 weeks (approximately three months); and (ii) for sicknesses ending in the reference month, irrespective of the total duration. For sicknesses beginning and ending in the reference month the average duration was of the order of 2.0 weeks; the duration was about 2.4 weeks for sicknesses beginning in the month but continuing on the date of survey. The durations were generally of the same order in the rural and urban sectors. The average duration, calculated for sicknesses ending in the reference month, was generally less for males than for females, decreased in the age-group 7-16 from age-group 0-6 to increase over the two older age-groups adopted. The duration was generally lower for the gainfully employed than others.

2.6. *Causes of sickness* : The data on the causes of sickness collected in the NSS have been examined in Appendix III. It has been seen that a very high proportion of sicknesses fell in the heterogeneous and undefined groups of 'other fevers diagnosed', 'other fevers undiagnosed', 'stomach troubles', 'other diseases diagnosed', and 'other diseases undiagnosed'. These groups constituted 61 per cent of sicknesses in the rural sector and 88 per cent in the urban in the NSS seventh round. Reliable information on causes of sickness is difficult to obtain through lay investigators : the lack of medical facilities in the rural areas of India also works against the correct reporting of the causes of sickness. But even with medical investigators and detailed probes but without clinical and laboratory examinations, a high proportion of causes (56 per cent) was misclassified as compared to the hospital records in the West Bengal Health Survey, 1955. Thus while reliable information on the demographic and socio-economic aspects of morbidity (age, sex, days lost, expenditure on medicines, etc.) could be collected through the interview-survey, it is believed that a diagnostic-survey with a fully equipped team would be required for clinical and laboratory examinations to supply similar reliable information on causes of sickness.

2.7. *Expenditure on medicine and medical services* : Expenditures on medicine and medical services were collected from the household consumer expenditure schedule and presented in Appendix IV. The average per person per month expenditure on medicines was about Rs. 0.30 in the rural sector and Rs. 0.86 in the urban sector. The expenditure on medical services came out to Rs. 0.10 in the rural sector and Rs. 0.16 in the urban. The total expenditure on medicine and medical services was about Rs. 0.40 in the rural sector (3 per cent of the total expenditure per month) and about Re. 1 in the urban (3.5 per cent of the total expenditure per month). In the seventh round, the expenditure on medicine and medical services per sick person was estimated at Rs. 5.25 per month in the rural sector. It will be remembered that the prevalence rate, by definition, excluded the chronic non-disabling cases, normal delivery, etc. for which there could nonetheless be expenses on medicines and medical services.

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2.8. *Medical facilities in the villages* : Information on the proportion of villages with type of medical practitioner and the distance from the nearest hospital, taken from the NSS Draft Report No. 67, 'Indian Villages : A Study of Some Social and Economic Aspects', is presented in Appendix V. In only 2 per cent of the villages in India, there were qualified allopaths (M.B., B.S. or Licentiates); the proportion of villages with Ayurvedic practitioners and Homeopaths was 4.5 per cent and 3 per cent respectively. On an average, the distance of the nearest hospital from the village was about 9 miles; this average distance decreased, within a narrow band, from 10 miles in the case of the small villages (with population 200 or less) to 7 miles for the large villages (with population 2001 and above).

2.9. *Concluding remarks* : The concepts and definitions adopted in the NSS as also in the health surveys of some other countries have been outlined in Chapter Three. There are sharp differences among the methods used in the National Health Surveys and there should, therefore, be no expectation that the results are comparable. The sets of data emanating from the different health surveys are not intended for measuring the same thing. Within the limitations imposed, however, one may seek to observe the differences resulting from the different concepts and definitions adopted. While the incidence and prevalence of sickness in India were seen to be much lower than those in the developed countries examined—the UK, the USA, Canada, Denmark and Japan—the average duration of sickness was much higher in India. The definition of sickness adopted in the NSS—confinement to bed or abstinence from taking normal diet or inability to attend normal duties and activities, for at least 24 hours—was comparatively more stringent than those in the other countries. The chronic non-disabling cases were excluded from the purview of the survey as also the residual effects of any disease. It is also not unlikely that minor illnesses, which would normally have very small durations, were not reported in the survey. Studies made on morbidity in the UK and the USA have shown the existence of recall lapse in morbidity data : the recall period of even one month has been found to be comparatively long. There may be two other causes tending to under-report minor illnesses : the absence of fully detailed probes and acceptance of proxy interviews. These would perhaps explain the lower rates of incidence and prevalence and the higher average duration in India (as obtained in the NSS) as compared to the developed countries. To eliminate the under-reporting of the minor illnesses, one should probably have a wider definition of sickness, an effective, shorter recall period, additional detailed probes and the interviewing of all the household members.

CHAPTER THREE  
CONCEPTS AND DEFINITIONS

3.1. Health has been defined by the World Health Organisation as the state of physical and mental wellbeing. One cannot, however, directly measure the positive state of health but has to adopt measures for assessing the ill health or morbidity. The concepts and definitions adopted in the NSS have been described in this chapter; a comparison has also been made with the concepts and definitions adopted in the National Health Surveys of the USA, the UK, Japan, Canada and Denmark.

3.2. *Items of information*: Information was collected on the sex, age, marital status, industry (or activity) status, cause of sickness and duration of sickness (in weeks). The reference period for entering information on morbidity was the last month, that is 30 days preceding the date of survey. Information on morbidity was also collected for persons who died during the reference period of a month, that is, for other persons also who, if alive, would have been treated as members of the household. Information on morbidity was collected for persons who

- (a) were confined to bed for at least 24 hours; or
- (b) abstained from taking the normal diet, that is, had to live on a sick diet appropriate to the nature of sickness, for at least 24 hours; or,
- (c) were unable to attend the normal duties and activities for at least 24 hours; due to illness or injury.

The following cases were excluded, namely, pregnancy, delivery, puerperium, and menstruation, not receiving any medical attention; handicapped condition with fixed symptom; and myopia, hypermetropia and astigmatism; but injuries and accidents were included.

3.3. The definitions adopted in the different countries vary to a large extent<sup>1</sup>. In Japan, information was collected on any unusual disturbance of physical and mental wellbeing

- (1) treated by physicians, dentists, or other therapists, or treated with medicines, drugs or some other materials;
- (2) that which confines the patient to bed or disables him to work for one day; but excluding all cases also excluded from the NSS<sup>2</sup>.

In the US National Health Survey, the morbidity condition was characterised by any entry on the questionnaire which described a departure from a state of physical or mental wellbeing. It resulted from a positive response to one of a series of 'illness

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<sup>1</sup>F. E. Linder has described some selected methodological points of health surveys in Canada, Denmark, Japan, the USA and the UK (Health as a demographic variable, *International Population Conference*, Vienna, (1959), from which Table (3.1) has been taken.

<sup>2</sup>T. Soda (1959) : Main features of the findings obtained in Sickness Surveys of Japan, *International Population Conference*, Vienna, 1959.

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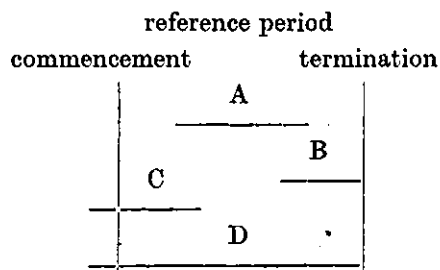
with recall' questions. In the coding and tabulating process, the conditions were selected or classified according to a number of different criteria, such as whether they were medically attended; whether they resulted in disability; whether they were acute or chronic; or according to the type of disease, injury, impairment or symptom reported<sup>1</sup>. In the Danish National Morbidity Survey of 1950 the criterion was essentially subjective. The respondents themselves were allowed to decide whether or not they felt ill. "The point was decided by the subjective judgement; if I feel ill, I am ill."<sup>2</sup> In the National Health Surveys of UK and Canada, a condition included in codes 001-795 (that is, sickness excluding injuries) of the International Statistical Classification of diseases, injuries and causes of death<sup>3</sup> which caused some disability during the period covered by the survey enquiry. By disability was meant that the person was suffering from it and was aware of its existence as something disturbing his state of health during the time<sup>4</sup>.

3.4. The definitions adopted in the NSS, it would be noted, imposed very restrictive criteria for a person to be recorded as sick. The existing disabling conditions only were obtained, and not the chronic non-disabling cases. Also, residual effects of any disease were not recorded.

3.5. Some selected methodological points in the National Health Surveys of the above five countries and India have been shown in Table (3.1).

DEFINITIONS

3.6. The following four categories of sickness according to the time of commencement and of termination were adopted in the NSS: these are in common with the international practices. Thus the category A relates to sicknesses beginning and ending within the reference period, category B to sicknesses beginning within the reference period and continuing on the date of survey, category C to sicknesses beginning before the reference period but ending within it and category D to sicknesses beginning before the reference period and continuing on the date of survey.



<sup>1</sup>US National Health Survey : *Health Statistics* : Selected Survey Topics, United States, July 1957-June 1958, Series B5, 1958.

<sup>2</sup>M. Lindhardt (1959) : The Danish National Morbidity Survey of 1950, *International Population Conference*, Vienna, 1959.

<sup>3</sup>*Sixth Revision of the International List*, World Health Organisation, 1948.

<sup>4</sup>W.P.D. Logan and E. M. Brooke (1957) : *The Survey of Sickness, 1943-52*, Studies on medical and population subjects, Number 12, General Register Office, London.

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TABLE (3.1): SELECTED METHODOLOGICAL POINTS IN RECENT NATIONAL HEALTH SURVEYS<sup>a</sup>

item	Canada	Denmark	Japan	USA	UK	India (NSS)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. survey period	1950-51	1951-53	1948-	1957-	1943-52	1953-58
2. age group covered	all	age 15+	all	all	age 16+	all
3. institutions included	included	excluded	unknown	excluded	included	excluded
4. seasons covered	all	all	one month only	all	all	all
5. continuous survey programme	no	no	periodic	yes	yes	continuous <sup>b</sup>
6. sample base	area unit	area unit and register	area unit	area unit	area unit and register	area unit
7. sample size (persons per year)	40,000	33,000	48,000	120,000	48,000	44,000 <sup>c</sup>
8. repeat visits	yes	no	yes	no	no	no
9. interview unit	household	person	household	household	person	household
10. use of series of memory-probe questions	no	yes	no	yes	no	no
11. use of diary	yes	no	yes	no	no	no
12. use of check list	diagnosis list	system list	no	diagnosis list	system list	no
13. recall (reference) period	current	1 month	current	2 weeks 1 year	2 months	1 month

<sup>a</sup>Figures for countries other than India from F.E.Linder: Health as a demographic variable, *International Population Conference*, Vienna, 1959.

<sup>b</sup>The health survey has been discontinued from the NSS fourteenth round, commencing in July 1958.

<sup>c</sup>Average for a 'round' of the NSS seventh, eleventh and twelfth rounds.

3.7. *Spell of sickness*: A person was considered to be under one single spell of sickness if the interval between the successive periods of sickness was less than three days with the same causes. In this report the word 'spell' and 'sickness' are taken as equivalent.

3.8. *Incidence rate*: The incidence rate, recommended by the Expert Committee on Health Statistics of the WHO to be defined as "the measurement of frequency of illness commencing during a defined period", was computed from:

$$\frac{\text{Number of sicknesses beginning during the reference period}}{\text{average population during the survey}} \times 1000$$

$$= \frac{A+B}{\text{average population}} \times 1000$$

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It is usual to calculate the rate per average population at risk, that is, the average of the population between the two limits of the reference period. In the NSS, however, the population as obtained on the date of survey was taken as the base for simplicity of calculation.

3.9. *Prevalence rate*: The rate was recommended by the WHO Expert Committee on Health Statistics "to be used to describe the measurement of frequency of illnesses in existence at any time during a defined period (that is, a year, a month, a week)". In the NSS, the month prevalence rates were calculated as number of cases of sickness experienced during the reference period per 1000 population

$$= \frac{A+B+C+D}{\text{average population}} \times 1000$$

Another prevalence rate has been in use for a long time in the US, Canada and some other countries, which is now more precisely expressed as 'point prevalence rate', which according to the WHO Expert Committee on Health Statistics is defined as "the term 'point prevalence' (or more specifically the prevalence at a stated point of time) be used to describe the measurement of frequency of illnesses in existence at a particular point at any time".

3.10. *Average duration of sickness*: The average duration of sickness calculated in this report was defined as the total weeks of sickness for a certain category divided by the number of spells in the category.

CATEGORIES OF SICKNESS

3.11. Table (3.2) shows the percentage distribution of the spells of sickness by categories of sickness and sex in the rural and urban sectors for the different NSS rounds. The categories B and C should theoretically have shown the same percentages, if the survey covered the whole period of one year and if one neglects two extreme borders. However, excepting the seventh round, the percentages in these two categories differ markedly. The categories A and B constitute the sicknesses beginning in the reference month, categories A and C sicknesses ending in the month and categories B and D sicknesses continuing at the time of the survey.

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TABLE (3.2) : PERCENTAGE DISTRIBUTION OF THE SPELLS OF SICKNESS IN CATEGORIES OF SICKNESS BY SEX FOR DIFFERENT NSS ROUNDS : ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	sex	categories of sickness <sup>a</sup>				all categories	
				A	B	C	D		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
1.	rural	seventh	October 1953-	male	63.65	10.23	12.38	13.74	100
2.	"	"	March 1954	female	67.55	11.04	10.43	10.98	100
3.	"	"	"	total	65.48	10.61	11.46	12.45	100
4.	"	eleventh	August 1956-	male	73.05	14.26	5.82	6.87	100
5.	"	"	January 1957	female	70.81	10.63	8.72	9.84	100
6.	"	"	"	total	72.00	12.69	7.07	8.15	100
7.	"	twelfth	February 1957-	male	52.00	13.98	25.43	8.59	100
8.	"	"	July 1957	female	54.39	11.49	24.88	9.24	100
9.	"	"	"	total	53.12	12.82	25.17	8.89	100
10.	urban	seventh	October 1953-	male	58.41	13.78	15.03	12.78	100
11.	"	"	March 1954	female	56.77	19.69	11.14	12.40	100
12.	"	"	"	total	57.68	16.39	13.32	12.61	100
13.	"	eleventh	August 1956-	male	83.21	7.83	2.55	6.41	100
14.	"	"	January 1957	female	83.29	6.67	3.13	6.91	100
15.	"	"	"	total	83.24	7.34	2.80	6.62	100
16.	"	twelfth	February 1957-	male	59.91	8.82	28.19	3.08	100
17.	"	"	July 1957	female	58.58	5.20	24.80	11.42	100
18.	"	"	"	total	59.28	7.09	26.57	7.06	100
19.	"	thirteenth	September 1957-	male	74.93	9.19	4.04	11.84	100
20.	"	"	May 1958	female	73.17	8.31	4.68	13.84	100
21.	"	"	"	total	74.09	8.77	4.34	12.80	100

- <sup>a</sup> A Sickness beginning and ending within the reference month.  
 B Sickness beginning within the reference month and continuing on the date of survey.  
 C Sickness beginning before the reference month and ending within it.  
 D Sickness beginning before the reference month and continuing on the date of survey.



## CHAPTER FOUR

### INCIDENCE RATE

4.1. The incidence rate has been defined as the number of sicknesses beginning during the reference month per thousand population : these sicknesses may either end within the month (category A) or continue on the date of the survey (category B).

4.2. Table (4.1) shows the incidence rate per thousand persons by sex in the rural and urban sectors for different NSS rounds. Higher incidence rates are generally returned by males in both the sectors and over the rounds excepting NSS thirteenth round urban. A good deal of variation is observed in the rate between the NSS rounds covered in both the sectors. The NSS seventh round covered the reference period September 1953—March 1954 and covered the seasons autumn, winter and spring, the NSS eleventh round had the reference period July 1956—January 1957 and covered the rainy, autumn and winter seasons. The NSS twelfth round had the reference period January-July 1957 and covered the spring, and the summer. The NSS thirteenth round had the reference period of August 1957—May 1958 and covered the autumn, winter, spring and the summer seasons. The rates of incidence and prevalence, and the average duration of sickness may be viewed in this setting. In the rural sector, the highest incidence rate was returned in the NSS seventh round and in the urban sector in the NSS twelfth round.

TABLE (4.1) : INCIDENCE RATES PER 1000 PERSONS BY SEX AND SECTOR FOR DIFFERENT NSS ROUNDS : ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	male	female	total	number of sample households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. rural	seventh	October 1953—March 1954	50.18 <sup>a</sup>	48.08 <sup>a</sup>	49.14	8,235
2. „	eleventh	August 1956—January 1957	30.20	22.21	26.39	7,161
3. „	twelfth	February 1957—July 1957	39.50	35.23	37.38	5,544
4. urban	seventh	October 1953—March 1954	46.51	44.57	45.58	1,720
5. „	eleventh	August 1956—January 1957	35.19	28.99	32.25	2,809
6. „	twelfth	February 1957—July 1957	56.53	49.62	53.19	1,731
7. „	thirteenth	September 1957—May 1958	34.98	34.62	34.81	11,680

<sup>a</sup>In NSS Draft Report No. 47 these figures have been shown correct to one decimal place.

4.3. *Incidence rate by age* : Table (4.2) shows the incidence rates in four broad age groups by sex for the rural and urban sectors in the different NSS rounds. The sex-differential is generally maintained in the different age groups. There is

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another feature which persists through all the rounds and in both the sectors : the incidence rate decreases in the age group 7-16 from the age group 0-6 and then continues to rise with increasing ages. This is perhaps what is to be expected.

TABLE (4.2): INCIDENCE RATES PER 1000 PERSONS BY SEX AND AGE FOR DIFFERENT NSS ROUNDS: ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	sex	age group				all ages
				0-6	7-16	17-46	47-	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. rural	seventh	October 1953-	male <sup>a</sup>	59.86	37.82	48.07	62.32	50.18
2. "		March 1954	female <sup>a</sup>	58.08	29.90	49.74	58.89	48.08
3. "			total	58.98	33.97	48.90	60.58	49.14
4. "	eleventh	August 1956-	male	28.43	17.40	34.65	43.84	30.20
5. "		January 1957	female	19.35	10.30	28.08	29.29	22.21
6. "			total	23.97	14.04	31.64	36.64	26.39
7. "	twelfth	February 1957-	male	33.84	32.19	46.68	40.69	39.50
8. "		July 1957	female	37.98	27.87	36.09	39.84	35.23
9. "			total	35.94	30.18	41.35	40.26	37.38
10. urban	seventh	October 1953-	male	56.83	26.17	50.34	53.10	46.51
11. "		March 1954	female	68.59	24.89	47.20	35.14	44.57
12. "			total	62.58	25.54	48.89	44.53	45.58
13. "	eleventh	August 1956-	male	37.45	19.43	35.55	60.17	35.19
14. "		January 1957	female	38.08	12.34	27.65	47.64	28.99
15. "			total	38.06	16.13	31.85	54.16	32.25
16. "	twelfth	February 1957-	male	70.86	44.43	53.07	57.24	56.53
17. "		July 1957	female	61.54	44.91	43.55	60.02	49.62
18. "			total	66.38	44.67	48.55	58.63	53.19
19. "	thirteenth	September 1957-	male	50.24	20.52	31.98	47.71	34.98
20. "		May 1958	female	46.22	26.14	32.21	38.57	34.62
21. "			total	48.29	23.17	32.08	43.30	34.81

<sup>a</sup> In NSS Draft Report No. 47 these figures have been shown correct to one decimal place.

4.4. *Incidence rate for the gainfully employed*: Table (4.3) shows the incidence rates for the gainfully employed and others by sex over the NSS rounds in the two sectors. The gainfully employed population generally returned higher incidence rates over the others. This feature is shown up by females also. The gainfully employed population is known to constitute mainly persons aged 17 and over and the generally higher incidence rate for them could perhaps be explained by the different age distributions.

4.5. *Incidence rate in different countries*: The incidence rates in the USA, Canada, England and Wales, and Denmark have been shown in Tables (4.4) to (4.7) respectively. The results of the health surveys in these countries were converted for presentation per 1000 persons per month. In interpreting these results, the differences in the definition of sickness and in the recall period (Table 3.1) may be

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**TABLE (4.3): INCIDENCE RATES PER 1000 PERSONS BY SEX AND ACTIVITY STATUS FOR DIFFERENT NSS ROUNDS: ALL-INDIA RURAL AND URBAN HOUSEHOLDS**

sector	round	survey period	sex	activity status		all
				gainfully employed	others	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. rural	seventh	October 1953-	male <sup>a</sup>	51.07	48.86	50.18
2. "		March 1954	female <sup>a</sup>	54.66	54.14	48.08
3. "			total	52.29	46.56	49.14
4. "	eleventh	August 1956-	male	31.75	28.46	30.20
5. "		January 1957	female	24.52	21.46	22.21
6. "			total	29.51	24.20	26.30
7. "	twelfth	February 1957-	male	42.13	36.75	39.50
8. "		June 1957	female	26.68	37.56	35.23
9. "			total	37.62	37.25	37.38
10. urban	seventh	October 1953-	male	54.04	26.65	46.51
11. "		March 1954	female	65.65	33.01	44.57
12. "			total	56.20	30.92	45.58
13. "	eleventh	August 1956-	male	31.09	39.14	35.19
14. "		January 1957	female	12.47	31.70	28.99
15. "			total	27.26	34.64	32.25
16. "	twelfth	February 1957-	male	52.36	60.51	56.53
17. "		June 1957	female	45.41	50.25	49.62
18. "			total	50.97	54.21	53.19
19. "	thirteenth	September 1957-	male	33.74	35.44	34.98
20. "		May 1958	female	42.14	33.02	34.62
21. "			total	35.20	34.63	34.81

<sup>a</sup> In NSS Draft Report No. 47 these figures have been shown correct to one decimal place.

kept in mind. For the USA, the data relate to the acute conditions per thousand persons, for Canada to the incidence rate, and for England and Wales and Denmark, to the sickness rate, defined as the number of persons sick in the reference period (in contrast to the number of spells of sicknesses, used in the calculation of the prevalence rates) regardless of when the sickness began. The incidence rate in Japan in National Health Survey in 1956 was 164/1000. It would be noted that the incidence rate of the US and Canada and the sickness rates of England and Wales and Denmark were much higher than those obtained for India.

**TABLE (4.4): INCIDENCE OF ACUTE CONDITIONS PER 1000 PERSONS BY SEX AND AGE: UNITED STATES, JULY 1957-JUNE 1958<sup>a</sup>**

sex	age group				all ages
	0-4	5-24	25-64	65--	
(1)	(2)	(3)	(4)	(5)	(6)
1. male	338	260	148	120	206
2. female	335	274	189	141	227
3. total	337	267	168	131	217

<sup>a</sup> *Health Statistics (Selected Survey Topics) from The US National Health Survey, Table 10, p.16.*

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TABLE (4.5): INCIDENCE RATE PER 1000 PERSONS  
BY SEX AND AGE: CANADIAN SICKNESS SURVEY  
1950-1951<sup>a</sup>

age group	male	female	total
(1)	(2)	(3)	(4)
1. 0—14	254	232	253
2. 15—24	132	174	153
3. 25—44	161	234	198
4. 45—64	147	193	169
5. 65—	154	193	173
6. all ages	182	220	201

<sup>a</sup> Canadian Sickness Survey, No. 11, Table 4-B, pp.19-20, Dominion Bureau of Statistics and the Department of National Health and Welfare, Canada.

TABLE (4.6): SICKNESS RATE PER 1000 PERSONS BY SEX AND AGE: SURVEY OF SICKNESS  
OF ENGLAND AND WALES, 1951<sup>a</sup>

age group	sex	January-March	April-June	July-September	October-December
(1)	(2)	(3)	(4)	(5)	(6)
1. 21—44	male	640	570	550	620
2. „	female	720	640	640	690
3. 45—64	male	740	650	640	690
4. „	female	800	760	750	760
5. 65—	male	850	780	780	820
6. „	female	900	880	850	870
7. 21-above	male	710	630	610	670
8. „	female	780	720	710	750

<sup>a</sup>W.P.D. Logan and E.M. Brooke 1957: *Studies on Medical and Population Subjects*, No. 12, Table 2, p. 43.

TABLE (4.7): SICKNESS RATE PER 1000 PERSONS  
BY SEX AND AGE IN DENMARK 1951-54<sup>a</sup>

sex	age group		
	15—44	45—	15—above
(1)	(2)	(3)	(4)
1. male	304	403	356
2. female	405	509	469

<sup>a</sup> M. Lindhardt: The Danish National Morbidity Survey of 1950, *International Population Conference*, (Vienna) 1959.

CHAPTER FIVE

PREVALENCE RATE

5.1. The monthly prevalence rate has been defined as the number of cases of sickness experienced during the reference month per thousand of total population. Table (5.1) gives the prevalence rates by sex in the rural and urban sectors for the different NSS rounds. In common with incidence rates, the prevalence rates are higher for the males as compared to the females. The highest prevalence rate in the rural sector came out in the NSS seventh round (65/1000), and in the urban sector in the NSS twelfth round (81/1000).

TABLE (5.1): PREVALENCE RATE PER 1000 PERSONS BY SEX AND SECTOR FOR DIFFERENT NSS ROUNDS: ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	male	female	total	number of sample households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. rural	seventh <sup>a</sup>	October 1953-March 1954	68.17	61.29	64.77	8,235
2. ,,	eleventh	August 1956-January 1957	35.23	27.93	31.66	7,161
3. ,,	twelfth	February 1957-July 1957	59.92	53.47	56.73	5,544
4. urban	seventh <sup>a</sup>	October 1953-March 1954	65.01	58.16	61.75	1,720
5. ,,	eleventh	August 1956-January 1957	38.60	32.17	35.55	2,809
6. ,,	twelfth	February 1957-July 1957	83.91	78.78	81.43	1,731
7. ,,	thirteenth	September 1957-May 1958	41.59	42.49	42.01	11,680

<sup>a</sup> In NSS Draft Report No. 47 these figures have been shown correct to one decimal place.

5.2. *Prevalence rate by age*: Table (5.2) shows the prevalence rate in four broad age groups by sex in the rural and urban sectors over the NSS rounds. The prevalence rate also shows a dip in age group 7-16 to rise again over the ages. The sex-differential is also maintained generally over the age groups.

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TABLE (5.2): PREVALENCE RATE PER 1000 PERSONS BY SEX AND AGE FOR  
DIFFERENT NSS ROUNDS: ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	sex	age group				all ages
				0-6	7-16	17-46	47--	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. rural	seventh <sup>a</sup>	October 1953- March 1954	male	79.48	45.20	68.40	90.40	68.17
2. "			female	69.11	38.50	64.40	78.80	61.29
3. "			total	74.37	41.90	66.40	84.50	64.77
4. rural	eleventh	August 1956- January 1957	male	33.72	19.57	40.24	53.36	35.23
5. "			female	24.58	11.87	34.68	40.96	27.93
6. "			total	29.23	15.92	37.49	47.22	31.66
7. rural	twelfth	February 1957- July 1957	male	54.77	46.58	69.30	64.97	59.92
8. "			female	54.87	39.52	57.01	62.69	53.47
9. "			total	54.82	43.31	63.12	63.81	56.73
10. urban	seventh	October 1953- March 1954	male	77.21	34.24	66.73	95.69	65.01
11. "			female	88.35	30.34	57.57	66.34	58.16
12. "			total	82.64	32.31	62.49	81.68	61.75
13. urban	eleventh	August 1956- January 1957	male	42.70	22.84	37.52	65.89	38.60
14. "			female	42.14	13.96	32.08	48.89	32.17
15. "			total	42.42	18.70	34.97	57.73	35.55
16. urban	twelfth	February 1957- July 1957	male	94.33	80.95	80.28	85.18	83.91
17. "			female	96.91	67.78	70.37	98.53	78.78
18. "			total	95.57	74.40	75.58	91.84	81.43
19. urban	thirteenth	September 1957- May 1958	male	58.47	22.32	37.35	65.10	41.59
20. "			female	52.09	29.65	41.15	53.91	42.49
21. "			total	55.37	25.79	39.11	59.70	42.01

<sup>a</sup> In NSS Draft Report No. 47 these figures have been shown correct to one decimal place.

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5.3. *Prevalence rate for the gainfully employed* : The prevalence rates for the gainfully employed and others by sex in the rural and urban sectors over the NSS rounds are shown in Table (5.3). In the rural sector excepting the NSS twelfth round gainfully employed show higher prevalence rate than others. In the urban sector the prevalence rate was higher for the gainfully employed in the NSS seventh round but lower in the NSS eleventh to twelfth round. In the NSS thirteenth round the rates were of the same order as for the gainfully employed and the others.

TABLE (5.3) : PREVALENCE RATE PER 1000 PERSONS BY SEX AND ACTIVITY STATUS FOR DIFFERENT NSS ROUNDS : ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	sex	activity status		all status	
				gainfully employed	others		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
1.	rural	seventh	October 1953–March 1954	male	70.23	52.43	68.17
2.	„			female	69.83	56.77	61.29
3.	„			total	70.09	55.11	64.77
4.	rural	eleventh	August 1956–January 1957	male	36.81	32.09	35.23
5.	„			female	30.37	26.26	27.93
6.	„			total	34.81	28.54	31.66
7.	rural	twelfth	February 1957–July 1957	male	59.91	59.93	59.92
8.	„			female	45.68	55.59	53.47
9.	„			total	55.76	57.28	56.73
10.	urban	seventh	October 1953–March 1954	male	71.20	51.83	65.01
11.	„			female	82.03	52.06	58.16
12.	„			total	73.35	51.98	61.75
13.	urban	eleventh	August 1956–January 1957	male	32.57	44.48	38.60
14.	„			female	12.78	35.34	32.17
15.	„			total	28.50	38.94	35.55
16.	urban	twelfth	February 1957–July 1957	male	75.67	88.53	83.91
17.	„			female	51.33	82.74	78.78
18.	„			total	70.79	84.97	81.43
19.	urban	thirteenth	September 1957–May 1958	male	39.37	43.72	41.59
20.	„			female	48.73	41.06	42.49
21.	„			total	41.02	42.47	42.01

5.4. *Prevalence rates in different countries* : Table (5.4) shows the prevalence rate by sex and age obtained from the Sickness Survey in Canada, Table (5.5) the rates obtained from the Survey of Sickness of England and Wales and Table (5.6) from

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the Sickness Survey in Denmark. It will be observed that the prevalence rates in these developed countries were much higher than those reported for India. In the Sickness Survey of Japan, the prevalence rate of 336/1000 was reported.

TABLE (5.4): PREVALENCE RATE PER 1000 PERSONS  
BY SEX AND AGE: CANADIAN SICKNESS  
SURVEY, 1950-1951<sup>a</sup>

age group	male	female	total
(1)	(2)	(3)	(4)
1. 0-14	258	256	257
2. 15-24	134	178	157
3. 25-44	167	244	206
4. 45-64	157	207	181
5. 65-	175	216	195
6. all ages	189	229	209

<sup>a</sup>Canadian Sickness Survey, No. 11, Table 5B, p. 20, 1957

TABLE (5.5): PREVALENCE RATE PER 1000 PERSONS BY SEX, AGE AND QUARTER: SURVEY  
OF SICKNESS OF ENGLAND AND WALES, 1951<sup>a</sup>

age group	sex	January- March	April- June	July- September	October- December
(1)	(2)	(3)	(4)	(5)	(6)
1. 21-44	male	1120	960	930	1080
2. „	female	1490	1280	1260	1430
3. 45-64	male	1490	1220	1210	1300
4. „	female	1920	1750	1700	1740
5. 65-	male	1970	1760	1800	1880
6. „	female	2410	2310	2200	2270
7. 21-above	male	1380	1160	1150	1270
8. „	female	1790	1610	1570	1680

<sup>a</sup>W. P. D. Logan and E. M. Brooke (1957): *Studies on Medical and Population Subjects*, No. 12, Table 2, p. 43.

TABLE (5.6): PREVALENCE RATE PER 1000 PERSONS BY SEX AND AGE IN  
DENMARK, 1951.54<sup>a</sup>

sex	age group			
	15-39	40-59	60-	15-
(1)	(2)	(3)	(4)	(5)
1. male	371.6	505.9	783.1	491.1
2. female	576.7	805.8	1102.8	745.0

<sup>a</sup>M Lindhardt: The Danish National Morbidity Survey of 1950, *International Population Conference*, Vienna, 1959.



CHAPTER SIX

DURATION OF SICKNESS

6.1. The average duration of sickness has been defined as the total number of sickness-weeks divided by the number of spells, for any category of sickness. Sickness category C, it will be remembered, relates to sickness beginning before the reference period but ending within it and the category D to those beginning before the reference period and continuing on the date of the survey. The durations of these two categories could, however, be very high. A more meaningful calculation of the average duration of sickness could be by restricting to those sicknesses only with duration up to one month or three months. Table (6.1) gives the

TABLE (6.1): AVERAGE DURATION (IN WEEKS) OF SICKNESS (WITH TOTAL DURATION UP TO 13 WEEKS) FOR DIFFERENT CATEGORIES OF SICKNESS BY SEX FROM TWO INDEPENDENT SAMPLES: ALL-INDIA RURAL AND URBAN HOUSEHOLDS  
(NSS 7th round: 954 villages and 444 blocks)

category of sickness <sup>d</sup>	sample	rural			urban		
		male	female	total	male	female	total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. A	1	2.01	1.96	1.90	2.11	2.08	2.10
2.	2	1.99	2.01	2.00	1.64	1.92	1.77
3.	combined	2.00	1.90	2.00	1.90	2.00	1.94
4. B	1	2.60	2.03	2.38	2.15	2.57	2.38
5.	2	2.38	2.24	2.32	1.97	1.57	1.77
6.	combined	2.53	1.91	2.35	2.07	2.20	2.14
7. C <sup>b</sup>	1	2.08	2.49	2.27	1.72	2.13	2.00
8.	2	2.28	2.35	2.31	2.27	1.86	2.04
9.	combined	2.16	2.41	2.28	1.94	2.06	2.02
10. C <sup>c</sup>	1	2.98	3.40	3.18	4.19	2.59	3.19
11.	2	3.44	2.90	3.25	4.69	2.44	3.73
12.	combined	3.19	3.23	3.21	4.43	2.55	3.39
13. D	1	6.95	7.43	7.17	5.17	8.79	6.93
14.	2	5.61	6.81	6.04	6.99	7.10	7.05
15.	combined	6.33	7.07	6.66	5.97	7.86	6.98
16. all							
	categories 1	2.63	2.48	2.56	2.63	2.96	2.77
17.	" 2	2.71	2.54	2.63	2.56	2.52	2.54
18.	" combined	2.66	2.51	2.59	2.50	2.75	2.66

<sup>a</sup>A Sickness beginning and ending within the reference month.

<sup>B</sup> Sickness beginning within the reference month and continuing on the date of survey.

<sup>C</sup> Sickness beginning before the reference month and ending within it.

<sup>D</sup> Sickness beginning before the reference month and continuing on the date of survey.

<sup>b</sup>For sickness of duration up to 4 weeks.

<sup>c</sup>For sickness of duration up to 13 weeks.

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average duration of sickness (in weeks) for different categories of sickness by sex from two independent samples for the rural and urban sectors : sicknesses of duration less than 13 weeks are only considered in this table. For the sickness category C the average duration of sickness has also been calculated by taking sickness with the duration up to four weeks. The average duration of sickness thus defined was, in the rural sector, about 2.0 weeks for sicknesses beginning and ending in the reference month, about 2.4 weeks for sicknesses beginning in the reference month but continuing on the date of survey. For all categories of sickness with duration less than 13 weeks, the average duration comes up to 2.6 weeks. As stated later in the chapter the average durations are higher than those obtained for the developed countries, the plausible reasons for which have also been discussed, in the next chapter.

6.2. Table (6.2) shows the average duration of sickness by sex in the rural and urban sectors over the NSS seventh, twelfth and thirteenth rounds for sickness ending in the reference month. The males show higher average durations than the females ; in the rural sector, the average duration was highest in the twelfth round but in the urban sector, it was highest in the seventh round.

TABLE (6.2) : AVERAGE DURATION (IN WEEKS) OF SICKNESS ENDING IN THE REFERENCE MONTH BY SEX AND SECTOR FOR DIFFERENT NSS ROUNDS : ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	male	female	total	number of households
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. rural	seventh <sup>a</sup>	October 1953-March 1954	2.51	2.23	2.38	8,235
2. ..	twelfth	February 1957-July 1957	2.00	2.18	2.61	5,544
3. urban	seventh <sup>a</sup>	October 1953-March 1954	2.28	2.21	2.25	1,720
4. ..	twelfth	February 1957-July 1957	1.71	1.42	1.58	1,731
5. ..	thirteenth	September 1957-May 1958	1.52	1.95	1.72	11,680

<sup>a</sup> In NSS Draft Report No. 47 these figures have been shown correct to one decimal place.

6.3. *Average duration of sickness by age :* The average duration of sickness in broad age-groups by sex in the rural and urban sectors for the NSS seventh, twelfth and thirteenth (urban only) rounds is shown in Table (6.3), for sickness ending in the reference month. The average duration decreased in the age-group 7-16 from that in the age-group 0-6, but again increased systematically over the two older age groups.

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TABLE (6.3) : AVERAGE DURATION (IN WEEKS) OF SICKNESS ENDING IN THE REFERENCE MONTH BY SEX AND AGE FOR DIFFERENT NSS ROUNDS FROM TWO INDEPENDENT SAMPLES : ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	sex	age group				all ages
				0—6	7—16	17—46	47—	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. rural	seventh <sup>a</sup>	October 1953 - March 1954	male	2.18	2.00	2.30	3.78	2.51
2. „			female	2.03	2.44	2.20	2.38	2.23
3. „			total	2.11	2.24	2.30	3.10	2.38
4. rural	twelfth	February 1957— July 1957	male	1.84	1.64	2.50	8.03	2.99
5. „			female	1.74	1.36	3.01	1.72	2.18
6. „			total	1.78	1.51	2.77	4.77	2.61
7. urban	seventh <sup>a</sup>	October 1953— March 1954	male	2.12	1.86	2.19	3.14	2.28
8. „			female	1.81	1.71	2.23	3.98	2.21
9. „			total	1.97	1.80	2.21	3.42	2.25
10. urban	twelfth	February 1957— July 1957	male	1.94	1.48	1.68	1.84	1.71
11. „			female	1.67	1.32	1.33	1.40	1.42
12. „			total	1.82	1.41	1.54	1.57	1.58
13. urban	thirteenth	September 1957— May 1958	male	1.59	1.43	1.45	1.62	1.52
14. „			female	1.63	1.50	1.66	4.00	1.95
15. „			total	1.61	1.48	1.55	2.54	1.72

<sup>a</sup> In NSS Draft Report No. 47 these figures have been shown correct to one decimal place.

6.4. *Average duration of sickness for the gainfully employed* : Table (6.4) shows the average duration of sickness ending in reference month for the gainfully employed and others by sex in the rural and urban sectors in the NSS seventh, twelfth and thirteenth rounds. The gainfully employed show less duration of sickness than others. This is in contrast to the higher rates of inception obtained for the gainfully employed as compared to the others.

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TABLE (6.4) : AVERAGE DURATION (IN WEEKS) OF SICKNESS ENDING IN THE REFERENCE MONTH BY SEX AND ACTIVITY STATUS FOR DIFFERENT NSS ROUNDS FROM TWO INDEPENDENT SAMPLES : ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	sex	activity status		
				gainfully employed	others	all
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. rural	seventh <sup>a</sup>	October 1953–March 1954	male	2.41	2.67	2.51
2. „			female	2.29	2.19	2.23
3. „			total	2.34	2.66	2.38
4. rural	twelfth	February 1957–July 1957	male	2.18	3.88	2.99
5. „			female	2.03	2.21	2.18
6. „			total	2.14	2.87	2.61
7. urban	seventh <sup>a</sup>	October 1953–March 1954	male	2.08	3.15	2.28
8. „			female	2.48	2.18	2.21
9. „			total	2.18	2.50	2.25
10. urban	twelfth	February 1957–July 1957	male	1.55	1.85	1.71
11. „			female	1.43	1.42	1.42
12. „			total	1.53	1.60	1.58
13. urban	thirteenth	September 1957–May 1958	male	1.43	1.63	1.52
14. „			female	1.41	2.04	1.95
15. „			total	1.42	1.87	1.72

<sup>a</sup> In NSS Report No. 47 these figures have been shown correct to one decimal place.

6.5. *Average duration of sickness in England & Wales and Denmark* : The average duration of sickness in England and Wales and in Denmark are shown in Tables (6.5) and (6.6) respectively. These were calculated in a somewhat different manner from the rates obtained in the NSS. The average duration of sickness in the reference month only was taken. The average durations were much lower in these two countries than in India.

6.6. *Days of incapacity in India* : The average duration of sickness has been expressed above per spell of sickness for four categories of sickness—(A), (B), (C), (D)—in Table (6.1) and for sicknesses ending within the reference month (categories A and C) in Tables (6.2)—(6.4). The average duration of sickness could also be related to the general population at risk and termed the days of incapacity per person. It is easily seen that

$$\text{days of incapacity per person} = \text{prevalence rate per person} \times \text{average duration of sickness per spell}$$

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TABLE (6.5): AVERAGE DURATION (DAYS) OF SICKNESS IN THE REFERENCE MONTH  
BY SEX AND AGE: SURVEY OF SICKNESS, ENGLAND AND WALES, 1947-51<sup>a</sup>

age group	sex	1947	1948	1949	1950	1951
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. 21—24	male	1.01	0.80	0.77	0.88	1.04
2.	female	0.77	0.61	0.72	0.57	0.76
3. 25—34	male	0.81	0.71	0.76	0.70	0.84
4.	female	0.53	0.51	0.52	0.55	0.61
5. 35—44	male	0.88	0.72	0.74	0.71	0.71
6.	female	0.48	0.47	0.49	0.53	0.63
7. 45—54	male	0.99	0.97	0.84	0.82	0.98
8.	female	0.60	0.47	0.59	0.52	0.63
9. 55—64	male	1.00	1.18	1.09	1.13	1.27
10.	female	0.62	0.62	0.64	0.58	0.71
11. 65—74	male	0.92	0.86	0.99	0.93	0.95
12.	female	0.77	0.90	0.76	0.61	0.69
13. 75—	male	0.99	1.06	0.84	0.78	0.80
14.	female	0.88	1.25	1.00	0.76	0.66
15. 21—above	male	0.93	0.88	0.86	0.84	0.94
16.	female	0.62	0.63	0.63	0.57	0.65

<sup>a</sup> W.P.D. Legan and E.M; Brooke (1957): *Studies on Medical and Population Subjects*, No. 12; Table 4, p. 45.

TABLE (6.6): AVERAGE MONTHLY SICKNESS DAYS FOR  
THE GAINFULLY EMPLOYED IN DENMARK, 1951-54<sup>a</sup>

sex	age group			
	15—39	40—59	60—above	15—above
(1)	(2)	(3)	(4)	(5)
1. male	0.017	0.022	0.028	0.020
2. female	0.020	0.023	0.030	0.021

<sup>a</sup> Calculated from M. Lindhardt: *The Danish National Morbidity Survey 1950, International Population Conference, Vienna, 1959.*

6.7. In Table (6.7) the days of incapacity per person for sicknesses within the reference month have been given by sex for the seventh and thirteenth rounds. For sickness category A (sickness beginning and ending within the reference period) and category B (beginning within the reference period but continuing on the date of survey) the actual duration was taken and for the sickness category D (beginning before the reference period and continuing on the date of survey) the actual dura-

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tion was, of course, the complete reference period, that is, one month. For sickness category C (beginning before the reference period but ending within it) the date of termination within the reference period, and so the actual duration of sickness within it, were not available: for this category, an average of 15 days' sickness in the reference month was taken as a first approximation. For the rural sector, the days of incapacity were 1.05 per person in the seventh round and for the urban sector 0.97 in the seventh round and 0.43 in the thirteenth round. The days of incapacity were higher in the seventh round for the males than for the females. The smaller number of days of incapacity per person in the thirteenth round as compared to the seventh round could be explained by the lower rates of prevalence as also of the lower average duration of sickness per spell in the round.

TABLE (6.7) : DAYS OF INCAPACITY WITHIN THE REFERENCE MONTH PER PERSON BY SEX AND SECTOR IN NSS SEVENTH AND THIRTEENTH ROUNDS : ALL-INDIA RURAL AND URBAN HOUSEHOLDS

sector	round	survey period	male	female	total
(1)	(2)	(3)	(4)	(5)	(6)
1. rural	seventh	October 1953-March 1954	1.12	0.98	1.05
2. urban	seventh	October 1953-March 1954	1.02	0.91	0.97
3. ,,	thirteenth	September 1957-May 1958	0.41	0.46	0.43

6.8. *Days of incapacity in England and Wales* : The days of incapacity in England and Wales obtained from the Survey of Sickness in 1947-51 are given in Table (6.8) by sex and age group. The incapacity days in 1951 were 1.19 for males and 1.11 for females, only slightly higher than those obtaining in NSS in 1953-54. It will be recalled that the prevalence rate was much lower and the average duration of sickness per spell much higher in India as compared to England and Wales: the small difference in the numbers of days of incapacity in India in 1953-54 and in England and Wales in 1947-51 could, therefore, be only fortuitous. The days of incapacity in the thirteenth round in the urban areas of India have, however, come out much lower than those in England and Wales.

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**TABLE (6.8): DAYS OF INCAPACITY IN THE REFERENCE MONTH PER PERSON BY SEX AND AGE: SURVEY OF SICKNESS OF ENGLAND AND WALES, 1947-51<sup>a</sup>**

age group	sex	1947	1948	1949	1950	1951
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. 21—24	male	0.81	0.64	0.65	0.69	0.85
2.	female	0.84	0.66	0.86	0.67	0.84
3. 25—34	male	0.78	0.70	0.78	0.69	0.87
4.	female	0.68	0.69	0.74	0.74	0.81
5. 35—44	male	0.90	0.75	0.83	0.79	0.80
6.	female	0.74	0.72	0.78	0.82	0.95
7. 45—54	male	1.20	1.16	1.06	1.02	1.21
8.	female	1.07	0.84	1.08	0.92	1.07
9. 55—64	male	1.32	1.56	1.56	1.61	1.86
10.	female	1.16	1.20	1.29	1.11	1.34
11. 65—74	male	1.44	1.36	1.63	1.57	1.67
12.	female	1.64	1.92	1.68	1.34	1.52
13. 75—above	male	1.80	2.00	1.64	1.58	1.67
14.	female	2.03	2.91	2.38	1.92	1.65
15. 21—above	male	1.06	1.02	1.04	1.01	1.19
16.	female	1.00	1.02	1.07	0.95	1.11

<sup>a</sup> W.P.D. Logan and E.M. Brooke (1957): *Studies on Medical and Population Subjects*, No. 12, Table 4, p. 45.

CHAPTER SEVEN

CONCLUDING REMARKS

7.1. While the rates of incidence and prevalence in India have been seen to be much lower than those in the developed and semi-developed countries examined—the UK, the USA, Canada, Denmark and Japan—the average duration of sickness was much higher in India than in these countries. In the West Bengal Health Survey also a much smaller morbidity rate as compared to the UK was obtained. The “low level of health consciousness” has been cited in the Report of the Health Survey in West Bengal as the primary cause of this smaller morbidity rate in the country. The special definition of sickness adopted in the NSS—confinement to bed, or abstinence from taking normal diet, or inability to attend normal duties and activities, for at least 24 hours—was comparatively more stringent than that in the other countries. The chronic non-disabling cases were thus excluded from the purview of the survey as also the residual effects of any disease.

7.2. Studies made in the morbidity surveys in the UK and the USA have shown the existence of response errors, mainly a function of the recall period and the type and the severity of sickness. Table (7.1) shows the index of the number of illnesses experienced “month before last” as a ratio to that experienced in “last month” in 1947 by type and severity of illness and age in the UK in 1943-52. In the UK Survey of Sickness a reference period of the preceding two (Calendar) months was taken. For all types and severities of sickness, under-reporting in “months before last” as compared to the “last month” was 9 per cent for persons aged 16-64 and 3 per cent for persons aged 65-above, much greater for the new illnesses (34 and 36 per cent respectively in the two age groups). It was difficult to say, however, whether the under-reporting was due to a misclassification of dates (illnesses being remembered but assigned to a later month) or to complete omission (some less serious ailments which occurred two months back going unrecorded).

TABLE (7.1): INDEX OF NUMBER OF ILLNESS EXPERIENCED “MONTH BEFORE LAST” AS A RATIO TO THAT EXPERIENCED IN THE “LAST MONTH” IN 1947 BY TYPE AND SEVERITY OF ILLNESS AND AGE : SURVEY OF SICKNESS OF ENGLAND AND WALES, 1943-52<sup>a</sup>

type of illness	persons aged 16-64 by severity of illness				persons aged 65—
	serious	moderate and mild	minor and ill-defined	all severity	
(1)	(2)	(3)	(4)	(5)	(6)
1. new	99	72	64	66	64
2. recurrent	92	92	98	98	103
3. continued	100	88	98	97	100
4. all types	—	—	—	91	97

<sup>a</sup>W.P.D. Logan and E.M. Brooke (1957): *Studies on Medical and Population Subjects*, No. 12, pp. 27-28.



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7.3. Table (7.2) gives the index of illness rates of the weeks prior to interview by type of condition in the California Health Survey. For all acute conditions, the under-reporting due to recall lapse in the 4th week was 58 per cent and for conditions without medical care or activity restriction as high as 76 per cent, with the rates for the first week as base 100.

**TABLE (7.2): INDEX OF THE ILLNESS RATES OF THE WEEKS PRIOR TO INTERVIEW BY TYPE OF CONDITION: CALIFORNIA HEALTH SURVEY<sup>a</sup>**  
(base: illness rate for the first week = 100)

type of condition	number of weeks prior to interview			
	1	2	3	4
(1)	(2)	(3)	(4)	(5)
1. conditions with medical care and activity restriction	100	130	112	100
2. conditions without medical care or activity restriction	100	57	33	24
3. all acute conditions	100	73	51	42

<sup>a</sup>F. E. Linder (1959): Comparability of field studies in general health, *Work Conference on Problems in Field Studies in the Mental Disorders*, New York, Table E.

7.4. Table (7.3) shows from the US National Health Survey the illness rates for households in which all adults were interviewed for themselves and for households where proxy respondents were accepted. The figures have been expressed as the condition prevalence rates per thousand persons. The percentage difference between the rates in households where adults were interviewed for themselves and in households where proxy respondents were accepted was -11.0 per cent for all conditions, -11.1 per cent for the chronic conditions and -20.8 per cent for minor non-chronic conditions; that is, one-fifth of the minor non-chronic conditions were missed due to the acceptance of proxy interviews.

**TABLE (7.3): CONDITION PREVALENCE RATE (PER 1000 PERSONS) FOR HOUSEHOLDS IN WHICH ALL ADULTS WERE INTERVIEWED FOR THEMSELVES AND FOR HOUSEHOLDS WHERE PROXY INTERVIEWS WERE ACCEPTED: US NATIONAL HEALTH SURVEY<sup>a</sup>**

type of condition	all adults interviewed for themselves	proxy interviews permitted	percentage difference = $\frac{(3)-(2)}{(2)} \times 100$
(1)	(2)	(3)	(4)
1. chronic	11.48	10.20	-11.1
2. major non-chronic	1.31	1.26	-3.8
3. minor non-chronic	0.96	0.76	-20.8
4. all conditions	13.74	12.23	-11.0

<sup>a</sup> F. E. Linder (1959), op. cit., Table C

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7.5. In Table (7.4) the percentage of chronic conditions picked up initially and after the use of the check-list memory-probe questions for different types is shown from the US National Health Survey. It will be seen that only half the chronic conditions were reported in response to the initial probe questions and the check-list questions were necessary to pick up the other half. The percentage of conditions missed by the initial probe questions was the highest, 67 per cent, for sicknesses without medical care or restricted activity. The data on these items are, however, likely to be functions of the recall period.

TABLE (7.4) : PERCENTAGE OF CHRONIC CONDITIONS PICKED UP BY INITIAL AND CHECK-LIST MEMORY-PROBE QUESTIONS : US NATIONAL HEALTH SURVEY<sup>a</sup>

type of conditions	initial probe questions	final check-list questions	total
(1)	(2)	(3)	(4)
1. conditions <i>with</i> medical care <i>and</i> activity restriction	68	32	100
2. conditions <i>with</i> medical care <i>or</i> activity restriction	47	53	100
3. conditions <i>without</i> medical care <i>or</i> activity restriction	33	67	100
4. all chronic conditions	47	53	100

<sup>a</sup> F E Linder (1959), op. cit., Table D.

7.6. In the NSS the reference period taken was the last month, that is the 30 days preceding the date of survey. Judged from the results of the US National Health Survey, even this recall period of one month in the NSS is perhaps too long for collection of morbidity data, specially those relating to the minor non-disabling illnesses. With the stringent criteria of sickness adopted in the NSS, the recall period of one month, absence of fully detailed probes and acceptance of proxy interviews, the chance of the minor illnesses being missed becomes quite high. However, as has been seen, such under-reporting of morbidity data operates also in the developed countries. The only way to eliminate the under-reporting in morbidity data is perhaps to have a wider definition of sickness, additional detailed probes, and to attempt to interview the sick persons themselves. A shorter recall period would reduce the number of cases reported and may have higher "boundary effects". Adoption of a longer recall period and then analysis by recall periods to calibrate the data would minimize these two effects: this technique is reportedly being adopted for the US morbidity data and has, in fact, been in use in the NSS current birth and death data for some time past.<sup>1</sup>

<sup>1</sup> R. K. Som : (1959) On recall lapse in demographic studies, *International Population Conference*, Vienna, 1959.

## APPENDIX I

### LIST AND PRESENTATION OF DETAILED TABLES

#### 1.1. LIST OF DETAILED TABLES

In numbering the tables a system of multiple codings has been followed. Of the numbers within brackets, the left-hand-most digit refers to the chapter, the middle one is a running number for a topic under the chapter number (these two together referring to the corresponding table in the text), and the right-hand-most digit specifies the NSS round covered, namely :

- 7 : NSS seventh round;
- 11 : NSS eleventh round;
- 12 : NSS twelfth round;
- 13 : NSS thirteenth round.

The prefixes Z and S have been put outside the brackets to indicate the results for the rural population zones and the urban size-classes of towns respectively.

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1.2 PRESENTATION OF DETAILED TABLES

**TABLE (3.2.7) : PERCENTAGE DISTRIBUTION OF THE SPELLS OF SICKNESS IN CATEGORIES OF SICKNESS BY SEX FROM TWO INDEPENDENT SAMPLES : ALL-INDIA RURAL AND URBAN HOUSEHOLDS**

(NSS seventh round : 954 villages and 441 urban blocks)

	categories of sickness <sup>a</sup>	sample	rural			urban		
			male	female	total	male	female	total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	A	1	65.70	68.30	66.93	61.80	53.86	58.25
2.		2	60.89	66.51	63.50	54.84	59.95	57.06
3.		combined	63.65	67.55	65.48	58.41	56.77	57.68
4.	B	1	9.56	11.00	10.24	15.73	23.70	19.29
5.		2	11.13	11.09	11.11	11.72	15.30	13.28
6.		combined	10.23	11.04	10.61	13.78	19.69	16.39
7.		1	11.36	10.27	10.84	11.64	12.17	11.88
8.	C	2	13.75	10.65	12.31	18.60	10.01	14.86
9.		combined	12.38	10.43	11.46	15.03	11.14	13.32
10.	D	1	13.38	10.43	11.99	10.83	10.27	10.58
11.		2	14.23	11.75	13.08	14.84	14.74	14.80
12.		combined	13.74	10.98	12.45	12.78	12.40	12.61
13.	all categories	1	100	100	100	100	100	100
14.		2	100	100	100	100	100	100
15.		combined	100	100	100	100	100	100

**TABLE (3.2.11) : PERCENTAGE DISTRIBUTION OF THE SPELLS OF SICKNESS IN CATEGORIES OF SICKNESS BY SEX FROM TWO INDEPENDENT SAMPLES : ALL-INDIA RURAL AND URBAN HOUSEHOLDS**

(NSS eleventh round : 1,848 villages and 584 urban blocks)

	categories of sickness <sup>a</sup>	sample	rural			urban		
			male	female	total	male	female	total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	A	1	72.37	70.00	71.24	82.97	82.58	82.80
2.		2	73.46	72.12	72.95	83.45	84.40	83.90
3.		combined	73.05	70.81	72.09	83.21	83.29	83.24
4.	B	1	13.08	8.36	11.29	7.57	5.95	6.86
5.		2	14.46	13.24	13.98	8.21	7.81	8.05
6.		combined	14.26	10.63	12.69	7.83	6.67	7.34
7.	C	1	6.19	10.32	8.16	2.40	3.97	3.09
8.		2	5.54	6.71	5.99	2.76	1.80	2.36
9.		combined	5.82	8.72	7.07	2.55	3.13	2.80
10.	D	1	7.46	11.33	9.30	7.06	7.50	7.25
11.		2	6.54	7.94	7.08	5.49	5.99	5.69
12.		combined	6.87	9.84	8.15	6.41	6.91	6.62
13.	all categories	1	100	100	100	100	100	100
14.		2	100	100	100	100	100	100
15.		combined	100	100	100	100	100	100

- <sup>a</sup>A Sickness beginning and ending in the reference month.  
 B Sickness beginning in the reference month but continuing on the date of survey.  
 C Sickness beginning before the reference month and ending within it.  
 D Sickness beginning before the reference month and continuing on the date of survey.

*National Sample Survey*

**TABLE (3.2.12) : PERCENTAGE DISTRIBUTION OF THE SPELLS OF SICKNESS IN CATEGORIES OF SICKNESS BY SEX FROM TWO INDEPENDENT SAMPLES : ALL-INDIA RURAL AND URBAN HOUSEHOLDS**

(NSS twelfth round : 1,848 villages and 584 urban blocks)

	categories of sickness <sup>a</sup>	sample	rural			urban		
			male	female	total	male	female	total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	A	1	54.42	51.56	53.15	50.30	41.67	46.54
2.		2	49.73	56.54	52.76	65.00	64.47	64.74
3.		combined	52.00	54.39	53.12	59.91	58.58	59.28
4.	B	1	14.97	11.76	13.54	18.13	14.15	16.40
5.		2	13.07	11.29	12.14	4.05	1.64	2.87
6.		combined	13.98	11.49	12.82	8.82	5.20	7.09
7.	C	1	21.81	28.27	24.68	25.96	21.38	23.97
8.		2	28.63	22.31	25.43	29.40	26.86	28.16
9.		combined	25.43	24.88	25.17	28.19	24.80	26.57
10.	D	1	8.80	8.41	8.63	5.61	22.80	13.09
11.		2	8.57	9.86	9.67	1.55	7.03	4.23
12.		combined	8.59	9.24	8.89	3.08	11.42	7.06
13.	all categories	1	100	100	100	100	100	100
14.		2	100	100	100	100	100	100
15.		combined	100	100	100	100	100	100

**TABLE (3.2.13) : PERCENTAGE DISTRIBUTION OF THE SPELLS OF SICKNESS IN CATEGORIES OF SICKNESS BY SEX FROM TWO INDEPENDENT SAMPLES : ALL-INDIA URBAN HOUSEHOLDS**

(NSS thirteenth round : 1,168 urban blocks)

	categories of sickness <sup>a</sup>	sample	male	female	total
	(1)	(2)	(3)	(4)	(5)
1.	A	1	71.94	72.13	72.04
2.		2	78.06	74.26	76.25
3.		combined	74.93	73.17	74.09
4.	B	1	10.79	9.75	10.29
5.		2	7.52	6.78	7.17
6.		combined	9.19	8.31	8.77
7.	C	1	3.60	4.84	4.19
8.		2	4.50	4.51	4.50
9.		combined	4.04	4.68	4.34
10.	D	1	13.67	13.28	13.48
11.		2	9.92	14.45	12.08
12.		combined	11.84	13.84	12.80
13.	all categories	1	100	100	100
14.		2	100	100	100
15.		combined	100	100	100

<sup>a</sup>A Sickness beginning and ending in the reference month.

B Sickness beginning in the reference month and continuing on the date of survey.

C Sickness beginning before the reference month and ending within it.

D Sickness beginning before the reference month and continuing on the date of survey.

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TABLE S(4.1.7) : INCIDENCE RATE PER 1000 PERSONS IN SIZE CLASSES OF TOWNS BY SEX FROM TWO INDEPENDENT SAMPLES : ALL-INDIA URBAN HOUSEHOLDS

(NSS seventh round : 441 urban blocks)

size classes of towns	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. below 15,000	1	58.01	32.27	45.37
2.	2	32.58	54.14	42.85
3.	combined	45.85	42.42	44.19
4. 15,000—50,000	1	44.11	55.74	49.73
5.	2	64.26	53.51	58.94
6.	combined	53.51	54.67	54.08
7. below 50,000	1	51.10	43.50	47.40
8.	2	47.74	53.83	50.70
9.	combined	49.56	48.42	49.00
10. 50,000—100,000	1	44.72	42.76	43.81
11.	2	38.90	27.32	33.32
12.	combined	41.79	34.73	38.44
13. 100,000—above	1	53.39	51.60	52.57
14.	2	47.80	39.68	43.96
15.	combined	50.85	46.34	48.60
16. cities	1	38.23	30.36	38.72
17.	2	25.00	27.78	26.23
18.	combined	31.15	33.03	31.97
19. 50,000—above	1	47.61	46.05	47.30
20.	2	38.81	33.17	36.18
21.	combined	43.31	40.21	41.86
22. all-India urban	1	40.47	45.14	47.40
23.	2	43.30	43.96	43.61
24.	combined	46.51	44.57	45.58

*National Sample Survey*

TABLE (4.2.7): INCIDENCE RATE PER 1000 PERSONS BY SEX  
AND AGE FROM TWO INDEPENDENT SAMPLES :  
ALL-INDIA RURAL HOUSEHOLDS  
(NSS seventh round : 954 villages)

age group	sample	male	female
(1)	(2)	(3)	(4)
1. 0—6	1	73.03	73.31
2.	2	46.69	41.80
3.	combined	59.86	58.08
4. 7—16	1	46.77	29.95
5.	2	28.58	29.85
6.	combined	37.82	29.90
7. 17—46	1	55.24	57.30
8.	2	40.44	41.95
9.	combined	48.07	49.74
10. 47—	1	59.34	62.80
11.	2	65.28	54.71
12.	combined	62.32	58.89
13. all ages	1	57.81	55.00
14.	2	42.31	40.79
15.	combined	50.18	48.08

TABLE (4.2.11): INCIDENCE RATE PER 1000 PERSONS BY SEX AND AGE FROM TWO INDE-  
PENDENT SAMPLES : ALL-INDIA RURAL AND URBAN HOUSEHOLDS  
(NSS eleventh round : 1,848 villages and 584 urban blocks)

age group	sample	rural			urban		
		male	female	total	male	female	total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. 0—6	1	23.05	17.09	20.01	43.39	50.04	46.83
2.	2	33.22	21.68	27.76	32.42	27.29	29.98
3.	combined	28.43	19.35	23.97	37.45	38.68	38.06
4. 7—16	1	18.64	10.77	14.98	22.72	13.35	18.29
5.	2	16.14	9.85	13.11	16.49	11.39	14.14
6.	combined	17.40	10.30	14.04	19.43	12.34	16.13
7. 17—46	1	29.69	31.60	30.64	44.87	31.69	38.59
8.	2	39.56	25.17	32.65	26.59	23.49	25.17
9.	combined	34.65	28.08	31.64	35.55	27.65	31.85
10. 47—	1	41.86	27.34	34.48	71.46	56.76	64.50
11.	2	45.94	31.60	39.04	49.58	39.49	44.68
12.	combined	43.84	29.29	36.64	60.17	47.64	54.16
13. all ages	1	27.13	23.16	25.17	42.79	34.47	38.77
14.	2	33.20	21.51	27.62	28.19	23.60	26.05
15.	combined	30.20	22.21	26.39	35.19	28.99	32.25



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TABLE (4.2.12): INCIDENCE RATE PER 1000 PERSONS BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES: ALL-INDIA RURAL AND URBAN HOUSEHOLDS

(NSS twelfth round: 1,848 villages and 584 urban blocks)

age group	sample	rural			urban		
		male	female	total	male	female	total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. 0—6	1	31.04	38.41	34.75	50.52	51.29	50.88
2.	2	36.61	37.56	37.10	91.57	71.10	81.52
3.	combined	33.84	37.98	35.94	70.86	61.54	66.38
4. 7—16	1	32.33	19.74	26.83	25.13	14.59	19.71
5.	2	32.03	35.22	33.59	63.03	78.29	70.37
6.	combined	32.19	27.87	30.18	44.43	44.91	44.67
7. 17—46	1	30.57	24.57	27.51	31.80	15.10	23.87
8.	2	51.10	40.69	42.01	78.43	71.38	75.09
9.	combined	46.68	36.09	41.35	53.07	43.55	48.55
10. 47—	1	30.57	24.57	27.51	65.34	44.95	55.46
11.	2	51.10	55.85	53.49	48.82	73.97	61.74
12.	combined	40.69	39.84	40.26	57.24	60.02	58.63
13. all ages	1	38.83	29.58	34.30	38.44	25.82	32.33
14.	2	40.19	40.74	40.46	74.37	73.10	73.76
15.	combined	39.50	35.23	37.38	56.53	49.62	53.19

TABLE (4.2.13): INCIDENCE RATE PER 1000 PERSONS BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES: ALL-INDIA URBAN HOUSEHOLDS

(NSS thirteenth round: 1,168 urban blocks)

age group	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. 0—6	1	52.09	50.28	51.19
2.	2	48.56	42.23	45.55
3.	combined	50.24	46.22	48.29
4. 7—16	1	22.38	25.95	24.09
5.	2	18.69	26.33	22.26
6.	combined	20.52	26.14	23.17
7. 17—46	1	31.33	33.10	32.15
8.	2	32.61	31.34	32.02
9.	combined	31.98	32.21	32.08
10. 47—	1	50.43	39.56	45.23
11.	2	44.92	37.59	41.35
12.	combined	47.71	38.57	43.30
13. all ages	1	35.75	35.92	35.83
14.	2	34.25	33.33	33.82
15.	combined	34.98	34.62	34.81

*National Sample Survey*

TABLE (4.3.13) : INCIDENCE RATE PER 1000 PERSONS BY SEX AND ACTIVITY STATUS FROM TWO INDEPENDENT SAMPLES : ALL-INDIA URBAN HOUSEHOLDS

(NSS thirteenth round : 1,168 urban blocks)

activity status	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. gainfully employed	1	34.45	42.88	35.89
2.	2	32.99	41.47	34.53
3.	combined	33.74	42.14	35.20
4. others	1	36.29	35.04	35.80
5.	2	34.63	32.20	33.49
6.	combined	35.44	33.62	34.63
7. all	1	35.75	35.92	35.83
8.	2	34.25	33.33	33.82
9.	combined	34.98	34.62	34.81

TABLE Z(5.1.7) : PREVALENCE RATE PER 1000 PERSONS IN RURAL ZONES BY SEX FROM TWO INDEPENDENT SAMPLES : ALL-INDIA RURAL HOUSEHOLDS

(NSS seventh round : 954 villages)<sup>a</sup>

sex	sample	rural zones						all-India rural
		north	east	south	west	central	north-west	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. male	1	83.5	86.7	50.3	28.0	61.5	50.0	66.6
2.	2	71.5	90.9	41.4	35.4	86.0	76.6	69.7
3.	combined	77.8	88.7	45.7	31.8	73.3	63.8	68.2
4. female	1	60.9	85.1	44.0	28.0	56.9	53.8	59.6
5.	2	62.0	82.3	44.3	35.1	78.0	59.9	63.1
6.	combined	61.4	83.8	44.2	31.6	67.8	56.7	61.3
7. total	1	72.6	85.9	47.1	28.0	59.2	52.8	63.1
8.	2	66.8	86.8	42.8	35.2	82.4	68.5	66.4
9.	combined	69.8	86.3	44.9	31.7	70.6	60.4	64.8

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**TABLE S(5.1.7): PREVALENCE RATE PER 1000 PERSONS IN SIZE CLASSES OF TOWNS BY SEX FROM TWO INDEPENDENT SAMPLES: ALL-INDIA URBAN HOUSEHOLDS\***

(NSS seventh round: 441 urban blocks)

size classes of towns	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. below 50,000	1	77.36	55.25	66.50
2.	2	70.77	70.19	70.48
3.	combined	74.24	62.29	68.43
4. 50,000—above	1	54.28	52.08	53.25
5.	2	56.44	54.95	55.75
6.	combined	55.34	53.48	54.47
7. all-India urban	1	66.27	53.79	60.31
8.	2	63.65	62.91	63.30
9.	combined	65.01	58.16	61.75

\*See footnote to Table Z (5.1.7)

**TABLE S(5.1.13): PREVALENCE RATE PER 1000 PERSONS IN SIZE CLASSES OF TOWNS BY SEX FROM TWO INDEPENDENT SAMPLES: ALL-INDIA URBAN HOUSEHOLDS**

(NSS thirteenth round: 1,168 urban blocks)

size classes of towns	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. towns with population less than 3 lakhs	1	46.08	43.80	45.02
2.	2	42.58	41.32	41.98
3.	combined	44.30	42.59	43.48
4. towns with population 3 lakhs and above	1	49.54	60.70	54.77
5.	2	38.81	49.23	43.65
6.	combined	44.05	54.88	49.10
7. cities	1	19.53	21.94	20.61
8.	2	26.64	28.47	27.43
9.	combined	23.10	25.13	23.99
10. all-India urban	1	43.21	43.86	43.52
11.	2	40.02	41.13	40.54
12.	combined	41.59	42.49	42.01

*National Sample Survey*

TABLE (5.2.7)1 : PREVALENCE RATE PER 1000 PERSONS BY SEX AND  
AND AGE FROM TWO INDEPENDENT SAMPLES : ALL-INDIA  
RURAL HOUSEHOLDS

(NSS seventh round : 954 villages)

age group	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. 0	1	84.5	55.5	70.1
2.	2	89.6	75.6	82.6
3.	combined	86.9	65.1	76.0
4. 1—6	1	80.1	77.2	78.7
5.	2	74.7	61.7	68.5
6.	combined	77.4	69.7	73.6
7. 7—16 <sup>a</sup>	1	47.8	39.7	43.8
8.	2	42.4	37.3	39.9
9.	combined	45.2	38.5	41.9
10. 17—46 <sup>a</sup>	1	62.8	57.1	60.0
11.	2	74.4	72.0	73.2
12.	combined	68.4	64.4	66.4
13. 47—	1	90.3	79.1	84.5
14.	2	90.4	78.6	84.5
15.	combined	90.4	78.8	84.5
16. all ages	1	66.6	59.6	63.1
17.	2	69.6	63.1	66.4
18.	combined	68.1	61.3	64.7

<sup>a</sup> NSS Draft Report No. 47.

TABLE (5.2.7)2 : PREVALENCE RATE PER 1000 PERSONS BY SEX AND  
AGE FROM TWO INDEPENDENT SAMPLES : ALL-INDIA URBAN  
HOUSEHOLDS

(NSS seventh round : 441 urban blocks)

age group	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. 0—6	1	81.29	85.44	83.33
2.	2	72.61	91.79	81.84
3.	combined	77.21	88.35	82.64
4. 7—16	1	36.87	30.21	33.60
5.	2	31.36	30.48	30.93
6.	combined	34.24	30.34	32.31
7. 17—46	1	67.94	48.48	58.95
8.	2	65.41	67.40	66.34
9.	combined	66.73	57.57	62.49
10. 47—	1	91.42	66.34	79.26
11.	2	99.73	66.34	84.05
12.	combined	95.69	66.34	81.68
13. all ages	1	66.27	53.79	60.31
14.	2	63.65	62.91	63.30
15.	combined	65.01	58.16	61.75

TABLE S(5.2.7): PREVALENCE RATE PER 1000 PERSONS IN SIZE CLASSES OF TOWNS BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES: ALL-INDIA URBAN HOUSEHOLDS

(NSS seventh round: 441 urban blocks)

age group (years)	sample	male			female			total		
		size classes of towns		all-India urban	size classes of towns		all-India urban	size classes of towns		all-India urban
		below 50,000	50,000-		below 50,000	50,000-		below 50,000	50,000-	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. 0—6	1	74.10	89.34	81.29	102.87	62.90	85.44	88.72	76.86	83.33
2.	2	84.67	60.37	72.61	119.47	70.06	91.77	100.25	65.33	81.84
3.	combined	78.94	75.37	77.21	109.49	66.64	88.35	93.67	71.08	82.64
4. 7—16	1	40.72	32.75	36.87	33.84	26.32	30.21	37.33	29.58	33.60
5.	2	34.75	27.45	31.38	35.49	23.85	30.48	35.13	25.72	30.93
6.	combined	37.80	30.26	34.24	34.68	25.19	30.34	36.23	27.80	32.31
7. 17—46	1	85.70	47.55	67.94	42.95	55.18	48.48	65.70	51.02	58.95
8.	2	75.12	56.38	65.41	73.73	60.17	67.40	74.44	58.05	66.34
9.	combined	80.93	51.99	66.73	57.53	57.61	57.57	69.73	54.51	62.49
10. 47—	1	125.16	63.92	91.42	57.44	75.78	66.34	90.02	69.30	79.26
11.	2	101.25	98.10	99.73	68.32	64.23	66.34	85.78	82.20	84.05
12.	combined	112.06	80.34	95.69	62.87	70.04	66.34	87.80	75.59	81.68
13. all ages	1	77.36	54.28	66.27	55.25	52.08	53.79	66.59	53.25	60.31
14.	2	70.77	56.44	63.65	70.19	54.95	62.91	70.48	55.75	63.30
15.	combined	74.24	55.34	65.01	62.29	53.48	58.16	68.43	54.47	61.75

*National Sample Survey*

TABLE (5.2.11): PREVALENCE RATE PER 1000 PERSONS BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES: ALL-INDIA RURAL AND URBAN HOUSEHOLDS

(NSS eleventh round: 1,848 villages and 584 urban blocks)

age group	sample	rural			urban		
		male	female	total	male	female	total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. 0—6	1	28.88	24.64	26.72	46.93	56.32	51.79
2.	2	38.06	24.52	31.65	39.12	27.93	33.79
3.	combined	33.72	24.58	29.23	42.70	42.14	42.42
4. 7—16	1	19.98	12.06	16.29	28.19	16.11	22.48
5.	2	19.15	11.69	15.56	18.04	11.94	15.24
6.	combined	19.57	11.87	15.92	22.84	13.96	18.70
7. 17—46	1	33.23	38.90	36.04	47.16	37.26	42.45
8.	2	47.29	30.42	38.95	28.26	26.76	27.57
9.	combined	40.24	34.68	37.49	37.52	32.08	34.97
10. 47—	1	52.45	43.07	47.69	82.69	57.29	70.66
11.	2	54.33	38.47	46.70	50.13	41.38	45.88
12.	combined	53.36	40.96	47.22	65.89	48.89	57.73
13. all ages	1	31.42	30.29	30.86	47.20	38.94	43.21
14.	2	39.01	25.33	32.47	30.68	25.50	28.27
15.	combined	35.23	27.93	31.66	38.60	32.17	35.55

TABLE (5.2.12): PREVALENCE RATE PER 1000 PERSONS BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES: ALL-INDIA RURAL AND URBAN HOUSEHOLDS

(NSS twelfth round: 1,848 villages and 584 urban blocks)

age group	sample	rural			urban		
		male	female	total	male	female	total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1. 0—6	1	48.75	55.55	52.17	73.29	73.51	73.40
2.	2	60.74	54.23	57.40	115.77	118.72	117.22
3.	combined	54.77	54.87	54.82	94.33	96.91	95.57
4. 7—16	1	43.44	28.98	37.13	41.67	30.27	35.81
5.	2	50.10	49.05	49.59	118.70	109.08	110.85
6.	combined	46.58	39.52	43.31	80.95	67.78	74.40
7. 17—46	1	66.98	52.31	59.56	49.41	36.71	43.38
8.	2	71.59	61.72	66.64	110.26	104.94	107.74
9.	combined	69.30	57.01	63.12	80.28	70.37	75.58
10. 47—	1	59.33	42.48	50.75	76.91	73.40	75.26
11.	2	70.75	83.89	77.38	93.79	121.68	108.12
12.	combined	64.97	62.69	63.81	85.18	98.53	91.84
13. all ages	1	55.95	46.71	51.43	56.18	47.00	51.74
14.	2	63.99	60.06	62.02	111.29	110.89	111.10
15.	combined	59.92	53.47	56.73	83.91	78.78	81.43

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TABLE (5.2.13): PREVALENCE RATE PER 1000 PERSONS BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES : ALL-INDIA URBAN HOUSEHOLDS

(NSS thirteenth round : 1,168 urban blocks)

age group	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. 0—6	1	61.90	55.73	58.84
2.	2	55.34	48.52	52.09
3.	combined	58.47	52.09	55.37
4. 7—16	1	24.44	28.03	26.59
5.	2	20.24	30.40	24.99
6.	combined	22.32	29.65	26.79
7. 17—46	1	36.64	41.90	39.08
8.	2	38.03	40.42	39.14
9.	combined	37.35	41.15	39.11
10. 47—	1	71.82	57.81	65.11
11.	2	58.25	50.04	54.26
12.	combined	65.10	53.91	59.70
13. all ages	1	43.21	43.86	43.52
14.	2	40.02	41.13	40.54
15.	combined	41.59	42.49	42.01

TABLE (5.3.13): PREVALENCE RATE PER 1000 PERSONS BY ACTIVITY STATUS AND SEX FROM TWO INDEPENDENT SAMPLES : ALL-INDIA URBAN HOUSEHOLDS

(NSS thirteenth round : 1,168 urban blocks)

activity status	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. gainfully employed	1	40.91	51.44	42.71
2.	2	37.86	46.29	39.40
3.	combined	39.37	48.73	41.02
4. others	1	45.44	42.91	43.89
5.	2	42.07	40.41	41.07
6.	combined	43.72	41.06	42.47
7. all status	1	43.21	43.86	43.52
8.	2	40.02	41.13	40.54
9.	combined	41.59	42.47	42.01

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TABLE (6.3.7): AVERAGE DURATION (IN WEEKS) OF SICKNESS  
ENDING IN THE REFERENCE MONTH BY SEX AND AGE  
FROM TWO INDEPENDENT SAMPLES: ALL-INDIA  
RURAL HOUSEHOLDS

(NSS seventh round: 954 villages)

age group	sample	male	female
(1)	(2)	(3)	(4)
1. 0—6	1	2.09	2.08
2.	2	2.32	1.94
3.	combined	2.18	2.03
4. 7—16	1	1.97	2.33
5.	2	2.27	2.57
6.	combined	2.09	2.44
7. 17—46	1	2.29	2.17
8.	2	2.54	2.24
9.	combined	2.39	2.20
10. 47—	1	5.10	2.56
11.	2	2.36	2.14
12.	combined	3.78	2.38
13. all ages	1	2.58	2.23
14.	2	2.42	2.22
15.	combined	2.51	2.23



TABLE Z(6.3.7): AVERAGE DURATION (IN WEEKS) OF SICKNESS ENDING IN THE REFERENCE MONTH IN RURAL ZONES BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES : ALL-INDIA RURAL HOUSEHOLDS

(NSS seventh round: 954 villages)

rural zones	sample	male								female							
		age group								age group							
		0	1-6	7-16	17-46	47-56	57-66	67-	all ages	0	1-6	7-16	17-46	47-56	57-66	67-	all ages
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1. north	1	1.76	2.16	2.05	2.20	2.73	2.19	1.83	2.17	2.43	2.25	2.47	2.12	1.80	4.43	2.21	2.25
2.	2	2.55	2.56	2.53	2.22	1.68	1.51	2.76	2.33	—	2.00	3.26	2.81	2.50	1.00	—	2.61
3.	combined	2.34	2.24	2.17	2.21	2.50	2.01	2.08	2.21	2.43	2.21	2.62	2.42	2.04	2.88	2.21	2.35
4. east	1	2.87	2.13	1.87	2.56	2.02	1.76	4.84	2.42	1.43	1.93	2.12	2.27	2.03	2.17	10.85	2.25
5.	2	—	2.47	2.26	2.85	2.01	2.24	4.80	2.66	3.16	2.07	2.80	2.27	2.65	1.85	1.43	2.35
6.	combined	2.87	2.27	2.04	2.68	2.01	2.09	4.82	2.52	2.32	1.97	2.38	2.27	2.19	2.06	9.08	2.28
7. south	1	2.43	2.02	2.26	2.04	3.01	35.47	1.86	5.02	2.79	2.10	2.44	2.13	3.57	3.33	2.43	2.38
8.	2	2.06	2.46	1.97	2.15	1.99	1.75	1.12	2.10	2.23	1.50	2.40	1.75	2.53	1.97	1.43	1.96
9.	combined	2.24	2.23	2.14	2.10	2.30	23.08	1.49	3.52	2.60	1.78	2.42	1.96	2.62	2.79	1.73	2.17
10. west	1	—	2.20	2.01	2.20	2.74	5.93	—	2.40	—	2.07	2.76	1.73	1.43	3.14	2.57	2.09
11.	2	—	1.51	1.43	4.43	2.52	2.43	6.43	3.26	—	2.00	1.69	2.12	2.09	2.66	—	2.07
12.	combined	—	1.82	1.95	3.13	2.62	4.97	6.43	2.75	—	2.03	2.00	1.96	1.93	2.91	2.57	2.08
13. central	1	0.83	1.58	1.59	2.22	0.89	1.88	8.66	2.07	1.89	1.67	2.08	2.16	1.58	2.46	0.43	1.97
14.	2	1.09	2.10	1.88	2.39	1.80	1.43	0.43	2.11	1.43	1.74	2.08	2.26	2.28	0.43	2.46	2.03
15.	combined	0.97	1.88	1.75	2.31	1.61	1.75	6.06	2.09	1.70	1.73	2.07	2.20	1.93	1.75	1.52	2.00
16. north-west	1	2.06	1.60	2.38	1.62	2.04	6.26	—	2.12	2.43	2.06	3.88	2.01	3.04	1.43	1.76	2.34
17.	2	1.71	2.58	2.74	2.22	1.96	2.51	5.55	2.59	1.43	2.95	2.95	2.01	1.93	1.91	2.43	2.23
18.	combined	1.88	2.02	2.60	1.95	2.01	4.39	5.55	2.36	1.84	2.39	3.20	2.01	2.52	1.85	2.01	2.27
19. all-India rural	1	2.42	2.02	1.97	2.29	2.36	9.92	3.37	2.58	2.26	2.05	2.33	2.17	1.98	2.72	3.87	2.23
20.	2	1.92	2.39	2.27	2.54	1.97	2.02	3.58	2.42	2.02	1.92	2.57	2.24	2.42	1.76	2.08	2.22
21.	combined	2.23	2.17	2.09	2.39	2.16	6.53	3.47	2.51	2.17	2.01	2.44	2.20	2.18	2.27	3.28	2.23

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**TABLE S(6.3.7): AVERAGE DURATION (IN WEEKS) OF SICKNESS ENDING IN THE REFERENCE MONTH IN SIZE CLASSES OF TOWNS BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES: ALL-INDIA URBAN HOUSEHOLDS**

(NSS seventh round: 441 urban blocks)

size classes of towns	sample	male					female				
		age group				all ages	age group				all ages
		0-16	17-46	47-	17-		0-16	17-46	47-	17-	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1. below 50,000	1	2.06	3.05	4.97	3.57	3.13	1.98	2.44	5.09	3.14	2.60
2.	2	2.19	1.76	1.72	1.75	1.92	1.58	1.88	3.09	2.05	1.84
3.	combined	2.14	2.42	3.55	2.70	2.50	1.78	2.14	4.37	2.59	2.22
4. 50,000-above	1	2.14	2.12	2.75	2.21	2.19	1.89	2.66	3.34	2.72	2.33
5.	2	1.68	1.38	2.18	1.63	1.65	1.62	2.06	3.22	2.26	2.06
6.	combined	1.92	1.86	2.41	1.98	1.95	1.79	2.34	3.26	2.47	2.20
7. all-India urban	1	2.10	2.62	4.33	2.99	2.71	1.95	2.54	4.73	2.96	2.48
8.	2	1.99	1.64	1.91	1.71	1.82	1.59	1.96	3.16	2.15	1.93
9.	combined	2.04	2.19	3.14	2.42	2.28	1.79	2.23	3.98	2.54	2.21

**TABLE (6.3.12): AVERAGE DURATION (IN WEEKS) OF SICKNESS ENDING IN THE REFERENCE MONTH BY SEX AND AGE FROM TWO INDEPENDENT SAMPLES: ALL-INDIA RURAL HOUSEHOLDS**

(NSS twelfth round: 1,848 villages)

age group	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. 0-6	1	1.59	1.67	1.77
2.	2	1.79	1.81	1.80
3.	combined	1.84	1.74	1.78
4. 7-16	1	1.70	1.25	1.53
5.	2	1.58	1.42	1.50
6.	combined	1.64	1.36	1.51
7. 17-46	1	2.84	4.30	3.49
8.	2	2.38	1.83	2.15
9.	combined	2.59	3.01	2.77
10. 47-	1	11.60	1.82	7.43
11.	2	4.74	1.67	2.97
12.	combined	8.03	1.72	4.77
13. all ages	1	3.65	2.79	3.26
14.	2	2.42	1.71	2.08
15.	combined	2.99	2.18	2.61

TABLE (6.4.13): AVERAGE DURATION (IN WEEKS) OF SICKNESS ENDING IN THE REFERENCE MONTH PER SPELL BY SEX, AGE AND ACTIVITY STATUS FROM TWO INDEPENDENT SAMPLES: ALL-INDIA URBAN HOUSEHOLDS

(NSS thirteenth round: 1,168 urban blocks)

age group (years)	sample	male			female			total		
		gainfully employed	others	all	gainfully employed	others	all	gainfully employed	others	all
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1. 0—6	1	—	1.66	1.66	—	1.73	1.73	—	1.69	1.69
2.	2	—	1.53	1.53	—	1.52	1.52	—	1.52	1.52
3.	combined	—	1.59	1.59	—	1.63	1.63	—	1.61	1.61
4. 7—16	1	1.11	1.59	1.53	1.00	1.67	1.39	1.07	1.64	1.58
5.	2	0.87	1.41	1.35	1.83	1.36	1.64	1.15	1.38	1.37
6.	combined	0.98	1.51	1.43	1.28	1.51	1.50	1.10	1.51	1.48
7. 17—46	1	1.27	1.94	1.39	1.54	1.70	1.71	1.32	1.79	1.54
8.	2	1.52	1.48	1.61	1.43	1.67	1.61	1.50	1.64	1.56
9.	combined	1.40	1.73	1.45	1.48	1.72	1.66	1.42	1.72	1.55
10. 47—	1	1.73	1.91	1.78	1.40	3.29	2.84	1.07	2.86	2.22
11.	2	1.32	1.61	1.43	1.07	6.46	5.21	1.26	4.55	3.10
12.	combined	1.56	1.74	1.62	1.24	4.85	4.00	1.50	3.74	2.54
13. all ages	1	1.39	1.73	1.56	1.45	1.92	1.86	1.40	1.83	1.70
14.	2	1.40	1.53	1.49	1.37	2.18	2.06	1.44	1.90	1.75
15.	combined	1.43	1.63	1.52	1.41	2.04	1.95	1.42	1.87	1.72

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**TABLE (6.7.7): DAYS OF INCAPACITY WITHIN THE REFERENCE  
MONTH PER PERSON IN SIZE CLASSES OF TOWNS BY  
SEX FROM TWO INDEPENDENT SAMPLES :  
ALL-INDIA URBAN HOUSEHOLDS  
(NSS seventh round : 441 urban blocks)**

size classes of towns	sample	male	female	total
(1)	(2)	(3)	(4)	(5)
1. below 15,000	1	0.85	0.48	0.67
2.	2	1.26	1.08	1.17
3.	combined	1.05	0.76	0.91
4. 15,000—50,000	1	1.34	1.26	1.30
5.	2	1.22	0.73	0.98
6.	combined	1.28	1.01	1.15
7. below 50,000	1	1.10	0.86	0.98
8.	2	1.24	0.91	1.08
9.	combined	1.16	0.88	1.02
10. 50,000—100,000	1	1.44	1.06	1.26
11.	2	0.83	0.88	0.85
12.	combined	1.13	0.96	1.05
13. 100,000—above	1	0.99	1.10	1.04
14.	2	0.70	0.98	0.83
15.	combined	0.86	1.04	0.95
16. cities	1	0.56	0.96	0.73
17.	2	0.68	0.51	0.61
18.	combined	0.63	0.71	0.66
19. 50,000—above	1	0.99	1.06	1.02
20.	2	0.73	0.83	0.77
21.	combined	0.86	0.94	0.90
22. all-India urban	1	1.04	0.95	1.00
23.	2	0.98	0.87	0.93
24.	combined	1.01	0.91	0.97

## APPENDIX II

### A NOTE ON THE SAMPLE DESIGN AND PROCEDURE OF ESTIMATION

#### SAMPLE DESIGN

A 2.1. *Seventh round, rural areas* : A three-stage stratified sample design was adopted for the selection of sample households in rural areas in the seventh round, the tehsils, villages and household forming the first-, second- and third-stage units respectively. The rural areas of India were divided into 240 strata on the criteria of contribution to consumer expenditure and geographical contiguity. Two sample tehsils were selected with replacement directly from each stratum and then two sample villages from each selected tehsil, with probability proportional to census 1951 population/area. Within each selected village, about 9 sample households were selected systematically with a random start from the list of households.

A 2.2. *Eleventh and twelfth rounds, rural areas* : A two-stage stratified sample design was followed for the selection of sample households in rural areas in the eleventh and twelfth rounds, the villages and households forming the first- and the second-stage units respectively. The rural areas of India were divided into 72 strata, each stratum being approximately homogeneous with respect to the proportion of agricultural labourers to the total rural population and equal in respect of total population. In each stratum, either 24 villages or a multiple of 24 villages were selected with replacement and with probability proportional to census 1951 population/area and from each of the selected villages a number of sample households was selected systematically with a random start. In each sample village in the eleventh and twelfth rounds the number of sample households selected was 4 and 3 respectively.

A 2.3. The number of sample villages and households covered in these rounds has been given in Table (1.1).

A 2.4. *Seventh round, urban areas* : The sample design for the urban areas in the seventh round was three-stage stratified with the towns, blocks, and households forming the first-, second- and third-stage units respectively. The urban areas were divided into 20 strata on the basis of census 1951 population size classes of towns. Each of the big four cities—Calcutta, Bombay, Delhi and Madras—formed a separate stratum. In the rest of the urban areas four zones were constructed out of the six census population zones; and in each zone, four strata were formed on basis of census 1951 population, namely—(i) 100,000 and above, (ii) between 50,000 to 100,000, (iii) between 15,000 to 50,000 and (iv) below 15,000. From each stratum, towns were selected with probability proportional to census 1951 population and from each of the selected towns and cities, the blocks were selected with probability proportional

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to census 1951 population; the sampling in both the cases was done with replacement. About 4 sample households were selected from each of the sample blocks systematically with a random start.

A 2.5. *Eleventh, twelfth and thirteenth rounds, urban areas*: The sample design for the urban areas in the eleventh, twelfth, and thirteenth rounds was two-stage stratified, the urban blocks and households forming first- and second-stage units respectively. The urban areas in each of these rounds were divided into 94 strata, the basis of stratification being the census 1951 population size of towns and cities. Each city with a population of 3,00,000 and above was treated as a separate stratum as also each of the individual capitals of part A and part B States except Shillong, the capital of Assam, where the population was comparatively small (about 54 thousand in 1951). In Jammu and Kashmir, Srinagar City and Jammu Town were treated as separate strata. For greater Calcutta, eight strata were formed within the city of Calcutta (excluding Tollygunge), each stratum consisting of several adjoining wards; among the rest of greater Calcutta area, some towns and cities or groups of towns were treated as separate strata. In the rest of the urban area, natural divisions were taken as individual strata. From each stratum, blocks were selected with equal probability and the sample households from the selected blocks systematically with a random start.

A 2.6. The number of sample towns, blocks and households covered in these rounds has been given in Table (1.1).

PROCEDURE OF ESTIMATION

A 2.7. For the rural sector, divided into  $S$  strata, with the design  $u$ -stage stratified, in the  $i$ -th stratum ( $i = 1, 2, \dots, S$ ) and  $t$ -th stage ( $t = 1, 2, \dots, u$ ), let  $n_{i12\dots(t-1)}$  units be selected with replacement out of total  $N_{i12\dots(t-1)}$  units with probability  $\pi_{i12\dots t}$  and let us define  $f_t = n_{i12\dots(t-1)}\pi_{i12\dots t}$ . Then an unbiased estimate of the universe aggregate  $Y$  of a characteristic is given by

$$y = \sum_{\text{sample}} \left( \prod_1^u f_t^{-1} \right) y_{i12\dots u} \quad \dots (1)$$

where  $y_{i12\dots u}$  is the value of the characteristic in the ( $i12 \dots u$ )-th ultimate stage unit. The term  $\prod f_t^{-1}$  gives the multiplying factor or the multiplier for the ( $i12 \dots u$ )-th ultimate stage unit.

A 2.8. The above formula gives the general estimating equation for simple unbiased estimate for any sample design—uni- or multi-stage, stratified or unstratified, selection being done with equal probability with or without replacement, or varying probability with replacement or systematic sampling with equal or varying probability.

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A 2.9. Thus with a two-stage design the scheme of sampling in the  $i$ -th stratum was :

stage ( $t$ )	unit	number in		selection probability	$f_t$
		universe	sample		
(1)	(2)	(3)	(4)	(5)	(6)
1	village	$V_i$	$v_i$	$\pi_{ij}$	$v_i \pi_{ij}$
2	household	$H_{ij}$	$h_{ij}$	equal $= 1/H_{ij}$	$h_{ij}/H_{ij}$

A 2.10. An unbiased estimate of the universe aggregate  $Y$  of a characteristic (e.g., total number of sick persons) was, from the general estimating equation (1) :

$$y = \sum_{i,j,k} f_1^{-1} f_2^{-1} y_{ijk} = \sum_{i,j,k} m_{ijk} y_{ijk} \quad \dots (2)$$

where  $y_{ijk}$  was the value of the characteristic (number of sick persons) and  $m_{ijk} = f_1^{-1} f_2^{-1} = H_{ij}/v_i \pi_{ij} h_{ij}$ , the multiplier for, the  $ijk$ -th sample household.

A 2.11. With a three-stage design, the scheme of sampling in the  $i$ -th stratum was :

stage ( $u$ )	unit	number in		selection probability	$f_u$
		universe	sample		
(1)	(2)	(3)	(4)	(5)	(6)
1	tehsil	$T_i$	$t_i$	$\pi_{ij}$	$t_i \pi_{ij}$
2	village	$V_{ij}$	$v_{ij}$	$\pi_{ijk}$	$v_{ij} \pi_{ijk}$
3	household	$H_{ijk}$	$h_{ijk}$	equal $= 1/H_{ijk}$	$h_{ijk}/H_{ijk}$

A 2.12. An unbiased estimate of the universe aggregate  $Y$  was, from the general estimating equation (1) :

$$y = \sum_{i,j,k,l} f_1^{-1} f_2^{-1} f_3^{-1} y_{ijkl} = \sum_{i,j,k,l} m_{ijkl} y_{ijkl}$$

where  $y_{ijkl}$  was the value of the characteristic, and

$$m_{ijkl} = f_1^{-1} f_2^{-1} f_3^{-1} = H_{ijk}/t_i \pi_{ij} v_{ij} \pi_{ijk} h_{ijk}$$

multiplier for the  $ijkl$ -th sample household.

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A 2.13. The results given in this report are in the form of rates, ratios or percentages. If  $x$ , similarly defined as above, denotes the simple unbiased estimate of the universe aggregate  $X$  (for example, total number of all persons), then an estimate of the ratio  $Y/X$  (proportion of sick persons) was taken as  $y/x$ .

A 2.14. For the two sub-samples (parties of investigators), the above procedure of estimation was followed separately. For the combined sample, the unbiased estimates of  $Y$  and  $X$  were respectively taken as

$$y_c = \frac{1}{2} (y_I + y_{II}); \quad x_c = \frac{1}{2} (x_I + x_{II})$$

where  $y_I, x_I$  relate to unbiased estimates from sub-sample I and  $y_{II}, x_{II}$  from sub-sample II. The estimate of the ratio  $y/x$  for the combined sample was taken as  $r_c = y_c/x_c$ . The two sub-sample estimates would at once provide 50 per cent margin of uncertainty for each character under study.

A 2.15. For rural zones, the strata comprising the respective zones were taken to obtain estimates of aggregates and ratios.

A 2.16. A similar procedure was followed for the urban sector.

ERRORS OF ESTIMATE

A 2.17. The estimated variance of  $y$  in the general estimating equation (1) is given by  $s_y^2 = \sum_i s_{y_i}^2$

$$\text{where } s_{y_i}^2 = \sum_1^{n_i} \left[ n_i \sum_{2,3,\dots,u} \left( \prod_1^u f_i^{-1} \right) y_{i12\dots u} - \sum_{1,2,\dots,u} \left( \prod_1^u f_i^{-1} \right) y_{i12\dots u} \right]^2 / n_i(n_i-1) \dots \quad (2)$$

and  $n_i (\geq 2)$  is the number of first-stage units in the  $i$ -th stratum, the summation outside the square brackets being over the first-stage units.

A 2.18. In the NSS two parties (of investigators) work in one stratum one party each covering half of the first-stage sampling units. The estimated variance was calculated on the basis of the difference between the stratum estimates for the two parties: thus

$$s_{y_i}^2 = (y_{i1} - y_{i2})^2 / 4$$

and

$$s_y^2 = \sum_i s_{y_i}^2$$

where  $y_{i1}$  and  $y_{i2}$  are the stratum estimates of  $y$  from the two parties respectively.

A 2.19. The estimated variance of  $r = y/x$  is given by

$$s_r^2 = \frac{1}{x^2} (s_y^2 + r^2 s_x^2 - 2rs_{xy})$$

where

$$s_x^2 = \sum_i s_{x_i}^2 = \frac{1}{4} \sum_i (x_{i1} - x_{i2})^2$$

$$s_{xy} = \sum_i s_{x_i y_i} = \frac{1}{4} \sum_i (y_{i1} - y_{i2})(x_{i1} - x_{i2})$$



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The errors of estimates are obtained by taking the square root of the estimated variances. These are not, however, standard errors in the sense of sampling, but include "party" differences and may be called "margins of uncertainty".

A2.20 The estimates, errors of estimates, and percentage errors of the prevalence rates for the rural zones in the NSS 7th round are given in Table (A2.1). In NSS Draft No. 47, these have been given correct to one decimal place only.

TABLE (A2.1): ESTIMATES, ERRORS OF ESTIMATES, AND PERCENTAGE ERRORS  
OF THE PREVALENCE RATES FOR THE RURAL ZONES:  
ALL-INDIA RURAL HOUSEHOLDS  
(NSS seventh round: 954 villages)

rural zones	prevalence/1000 persons		percentage error <sup>a</sup>	number of sample persons
	rate	error		
(1)	(2)	(3)	(4)	(5)
1. north	69.78	14.25	20.42	7,315
2. east	86.30	10.44	12.10	10,024
3. south	44.92	4.06	9.04	6,768
4. west	31.70	3.19	10.06	5,802
5. central	70.60	8.96	12.69	6,146
6. north-west	60.40	7.87	13.03	5,423
7. all-India rural	64.74	4.45	6.87	41,478

$$^a 100 \times \frac{\text{error}}{\text{rate}}$$

## APPENDIX III

### CAUSES OF SICKNESS

A 3.1. Information was collected on causes of sickness in the NSS according to the following 23 groups :-

- |                             |                                  |
|-----------------------------|----------------------------------|
| 1. Malaria                  | 12. Stomach troubles             |
| 2. Kalaazar                 | 13. Cancer                       |
| 3. Typhoid                  | 14. Respiratory disease          |
| 4. Other fevers diagnosed   | 15. Heart disease                |
| 5. Other fevers undiagnosed | 16. Rickets                      |
| 6. Tuberculosis             | 17. Mental deformity             |
| 7. Smallpox                 | 18. Complications of child birth |
| 8. Plague                   | 19. Snake-bite                   |
| 9. Cholera                  | 20. Accidents                    |
| 10. Diphtheria              | 21. Old age                      |
| 11. Communicable disease    | 22. Other diseases diagnosed     |
|                             | 23. Other diseases undiagnosed   |

A 3.2. Although the data were tabulated by causes of sickness, the results have not been presented in this report. Information on causes of sickness collected by lay investigators without detailed probes as in the NSS is likely to be grossly unreliable as is clear from the high proportion of causes returned in the heterogeneous and undefined groups (the figures in brackets giving the percentages of sickness in the NSS seventh round rural and urban sectors respectively)—“other fevers diagnosed” (8.9 per cent; 20.5 per cent), “other fevers undiagnosed” (20.1 per cent; 18.4 per cent), stomach troubles (7.8 per cent; 17.7 per cent), “other diseases diagnosed” (9.1 per cent; 20.7 per cent), and “other diseases undiagnosed” (14.9 per cent; 11.1 per cent). These groups constituted 60.8 per cent of all sicknesses in the rural sector and 88.4 per cent in the urban sector. The position of sicknesses not specified but returned as diagnosed cannot be ascertained. The so-called undiagnosed sicknesses were 35.0 per cent in the rural sector and 29.5 per cent in the urban sector. In the NSS thirteenth round sicknesses other than Malaria, fevers diagnosed, Smallpox, Cholera, Tuberculosis and respiratory diseases constituted 62.9 per cent of all sicknesses. While Malaria was returned in 26.8 per cent of the cases (that is, a condition prevalence rate of 16.5/1000) in the seventh round urban sector, the proportion in the thirteenth round urban was 11.9 per cent (that is, a condition prevalence rate of 5.0/1000) after an interval of about four years. The trend in Malaria is, however, vitiated by the probable inclusion of some actual Malaria cases into the group “fevers diagnosed” and “fevers undiagnosed”. On the other hand, Smallpox was returned in 5.5 per cent of the cases in the seventh round urban sector (that is, a condition prevalence rate of 3.4/1000)

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but 6.5 per cent cases in the thirteenth round urban (that is, a condition prevalence rate of 2.7/1000). This, however, may indicate a real decrease in the prevalence of Smallpox in the thirteenth round as compared to the seventh round in the urban sector, because the symptoms for Smallpox are clearly marked.

A 3.3 It is felt that excepting sicknesses with clearly marked symptoms like Smallpox, reliable information on the causes of sickness is difficult to obtain through lay interviewers. Even with medical investigators and detailed probes but without clinical and laboratory examinations, it has been seen from the West Bengal Health Survey that a high proportion of cases (56 per cent) is likely to be misclassified as compared to the actual hospital records; for the lay investigators as high as 64 per cent of the sickness were misclassified; of all the cases of sickness, 6 per cent were not recorded at all by medical investigators and 12 per cent by lay investigators. The small proportion of sample villages having any medical practitioner and the average distance of 9 miles from the nearest hospitals<sup>1</sup> are also liable for a high proportion of sicknesses going unattended and undiagnosed in India<sup>2</sup>. Thus while reliable information on the demographic and socio-economic aspects of morbidity, for example, age, sex, days lost, expenditure on medicines, etc. could be collected through the interview-survey, a diagnostic-survey with a fully equipped team is required for clinical and laboratory examination to supply information on causes of sickness : this method is currently being followed in the US National Health Survey.

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<sup>1</sup>Appendix V.

<sup>2</sup>In the West Bengal Health Survey, 1955, it was observed that about 40 per cent of the acute and chronic sicknesses in rural areas and 34 per cent of the acute and 25 per cent of the chronic sicknesses in the urban area did not receive any medical treatment or were treated by quacks (S. J. Poti, M. V. Raman, S. Biswas and B. Chakravorty, 1959).

## APPENDIX IV

### EXPENDITURES ON MEDICINES AND MEDICAL SERVICES

A 4.1. Information on the expenditure on medicines and medical services incurred by the households is being collected in the household consumer expenditure schedules in the NSS rounds not separately for the sick persons but for the household as a whole. The results for the NSS fourth, seventh, ninth and tenth rounds are shown in Table (A 4.1). The average expenditure on medicines per person per month varied from Rs. 0.22 to Rs. 0.34 in the rural sector and was Rs. 0.86 in the urban sector: the proportional expenditure on medicines varied from 1.3 to 2.3 per cent in the rural sector and was 2.9 per cent in the urban sector. The expenditure on medical services (physician, nurses, etc.) in the rural sector was about Rs. 0.10 and the proportional expenditure about 0.7 per cent; in the urban sector the expenditure on this item was Rs. 0.16, and the proportional expenditure 0.63 per cent. Thus the total expenditure per person per month on medicines and medical services was about Rs. 0.40 in the rural sector: this constituted about 2-3 per cent of the total household expenditure per person per month. Inflating the medical expenditure per person by the reciprocal of the prevalence rate in the seventh round, the monthly expenditure per sick person comes to about Rs. 5.25—Rs. 3.40 on medicines and Rs. 1.85 on medical services—in the rural sector. Assuming that the total medical expenditure was correctly reported, the reported low rate of prevalence would explain the comparatively higher medical expenditure per sick person. The prevalence rate, as defined in the NSS, would, it will be remembered, exclude the chronic non-disabling cases, normal delivery, etc. for which there could, nonetheless, be expenses on medicines and medical services.

A 4.2. P. C. Mahalanobis<sup>1</sup> has shown on basis of the NSS tenth round data that not only the absolute but also the proportional expenditure on medicines and medical services continued to increase with the expenditure classes, thus "medical care would seem to be the highest luxury in India which only the richer people can afford".

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<sup>1</sup>P C Mahalanobis (1958): Anniversary address of the President: Science and National Planning, National Institute of Sciences of India; *Sankhyā*, 20, 89-106

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TABLE (A 4.1): ACTUAL AND PROPORTIONAL EXPENDITURE ON MEDICINES AND MEDICAL SERVICES IN THE RURAL AND URBAN SECTORS: NSS FOURTH, SEVENTH, NINTH AND TENTH ROUNDS

item of expenditure	sector	round(survey period)	expenditure per person per month (rupees)			percentage of total expenditure per month			number of sample households
			sample	sample	combined	sample	sample	combined	
			1	2	(6)	1	2	(9)	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1. medicines	rural	4th (April-September 1952) <sup>a</sup>	—	—	Rs.0.34	—	—	1.50	8,545
2. „	„	7th (October 1953-March 1954) <sup>b</sup>	0.26	0.18	0.22	1.47	1.05	1.27	1,413
3. „	„	9th (May-November 1955) <sup>c</sup>	0.44	0.25	0.34	2.91	1.64	2.26	1,536
4. „	urban	4th (April-September 1952) <sup>a</sup>	—	—	0.86	—	—	2.80	3,877
5. medical services	rural	7th (October 1953-March 1954) <sup>b</sup>	0.07	0.17	0.12	0.39	1.02	0.60	1,413
6. „	„	9th (May-November 1955) <sup>c</sup>	0.15	0.07	0.11	1.00	0.47	0.72	1,536
7. „	„	10th (December 1955-May 1956)	0.07	0.06	0.07	0.40	0.34	0.40	1,616
8. „	urban	10th (-do-)	0.18	0.14	0.16	0.72	0.54	0.63	1,326
9. total medical	rural	7th (October 1953-March 1954) <sup>b</sup>	0.33	0.35	0.34	1.86	2.07	1.96	1,413
10. „	„	9th (May-November 1955) <sup>a</sup>	0.59	0.32	0.45	3.91	2.11	2.98	1,536
11. „	all India	10th (December 1955-May 1956) <sup>d</sup>	—	—	0.43	—	—	2.29	2,754

<sup>a</sup>NSS Report No. 18, Tables with notes on consumer expenditure, Government of India, 1960.

<sup>b</sup>P C Mahalanobis (1958): Lecture Series in Japan.

<sup>c</sup>P C Mahalanobis (1959): Anniversary address of the President; *Next step in Planning*, National Institute of Sciences of India.

<sup>d</sup>P C Mahalanobis (1958): Anniversary address of the President: Science and National Planning, National Institute of Sciences of India, *Sankhyā*, 20, 69-106.

APPENDIX V

MEDICAL FACILITIES IN VILLAGES

A 5.1. Information on the existence of medical practitioners in the sample villages was collected in the tenth and twelfth rounds of the NSS in the Village Statistics schedule. The following Table showing the percentage of sample villages having medical practitioner by type of practitioners in the NSS tenth and twelfth rounds has been taken from the NSS Draft Report No. 67 on Village Statistics, tenth to twelfth round 1955—1957. In this table, a village having more than one type of medical practitioners has been counted separately under the different types. In rural-India only 2 per cent of villages were having qualified allopaths with M.B.,B.S. Degree or Licentiates. The proportion of sample villages having ayurvedic practitioners was understandably high, about 4-5 per cent, in rural India. Homeopaths came in a higher proportion than the allopaths—about 2-3 per cent in rural India.

TABLE (A 5.1): PERCENTAGE DISTRIBUTION OF VILLAGES HAVING MEDICAL PRACTITIONERS BY TYPE OF PRACTITIONERS, FROM TWO INDEPENDENT SAMPLES :  
NSS TENTH AND TWELFTH ROUNDS\*

type of medical practitioner	tenth			twelfth		
	sample 1	sample 2	combined	sample 1	sample 2	combined
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. allopaths	1.81	2.75	2.27	2.15	2.06	2.10
2. homeopaths	2.82	2.99	2.92	2.81	2.17	2.40
3. ayurvedic	4.90	5.48	5.19	3.60	4.60	4.15
4. others	4.38	5.31	4.84	6.04	5.75	5.90
5. number of sample villages	812	812	1,624	882	896	1,778

\*NSS Draft Report No. 67

A 5.2. Information was also collected in the village schedule on the distance of the nearest hospital from the sample villages. In about 1.2 per cent of the villages in the NSS tenth to twelfth round, hospitals were located within the village or within distance of half a mile. The average distance of hospitals from the sample villages was 9.0 miles in the NSS tenth, 8.8 miles in the eleventh and 8.6 miles in the twelfth rounds. The average distance of the nearest hospital from the sample villages is

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being shown in Table (A 5.2) by the size of village in the eleventh and twelfth rounds. It will be seen that the average distance was generally smaller in the larger villages, but even then the range was only from 10 miles for the small villages (with population of 200 or less) to 7 miles for the large villages (with population of 2001 and above.).

TABLE (A 5.2): AVERAGE DISTANCE (IN MILES) OF THE NEAREST HOSPITAL BY POPULATION SIZE CLASS OF THE SAMPLE VILLAGES FROM TWO INTERPENETRATING SAMPLES: NSS ELEVENTH AND TWELFTH ROUNDS<sup>a</sup>

population size class	eleventh				twelfth			
	percentage of villages	average distance (miles)			percentage of villages	average distance (miles)		
		sample 1	sample 2	combined		sample 1	sample 2	combined
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. up to 200	33.6	10.18	9.54	9.83	33.1	10.06	9.55	9.80
2. 201—500	33.6	8.61	9.68	9.09	34.1	7.73	8.11	7.92
3. 501—1000	19.5	7.47	8.01	7.73	18.8	8.12	8.93	8.50
4. 1001—2000	9.1	7.66	7.42	7.53	9.4	7.66	7.47	7.56
5. 2001—above	4.2	6.77	6.53	6.65	4.6	7.60	6.64	7.14
6. all classes	100	8.71	8.96	8.83	100	8.55	8.62	8.58
7. number of sample villages		884	895	1,779		882	896	1,778

<sup>a</sup> NSS Draft Report No. 67