

CBHI

TRENDS IN INCIDENCE
OF
TYPHOID IN DELHI

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Statistician,

Series I

Central Bureau of Health Intelligence.

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DIRECTORATE GENERAL OF HEALTH SERVICES
MINISTRY OF HEALTH & FAMILY WELFARE
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10

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OF
TYPHOID IN DELHI

By

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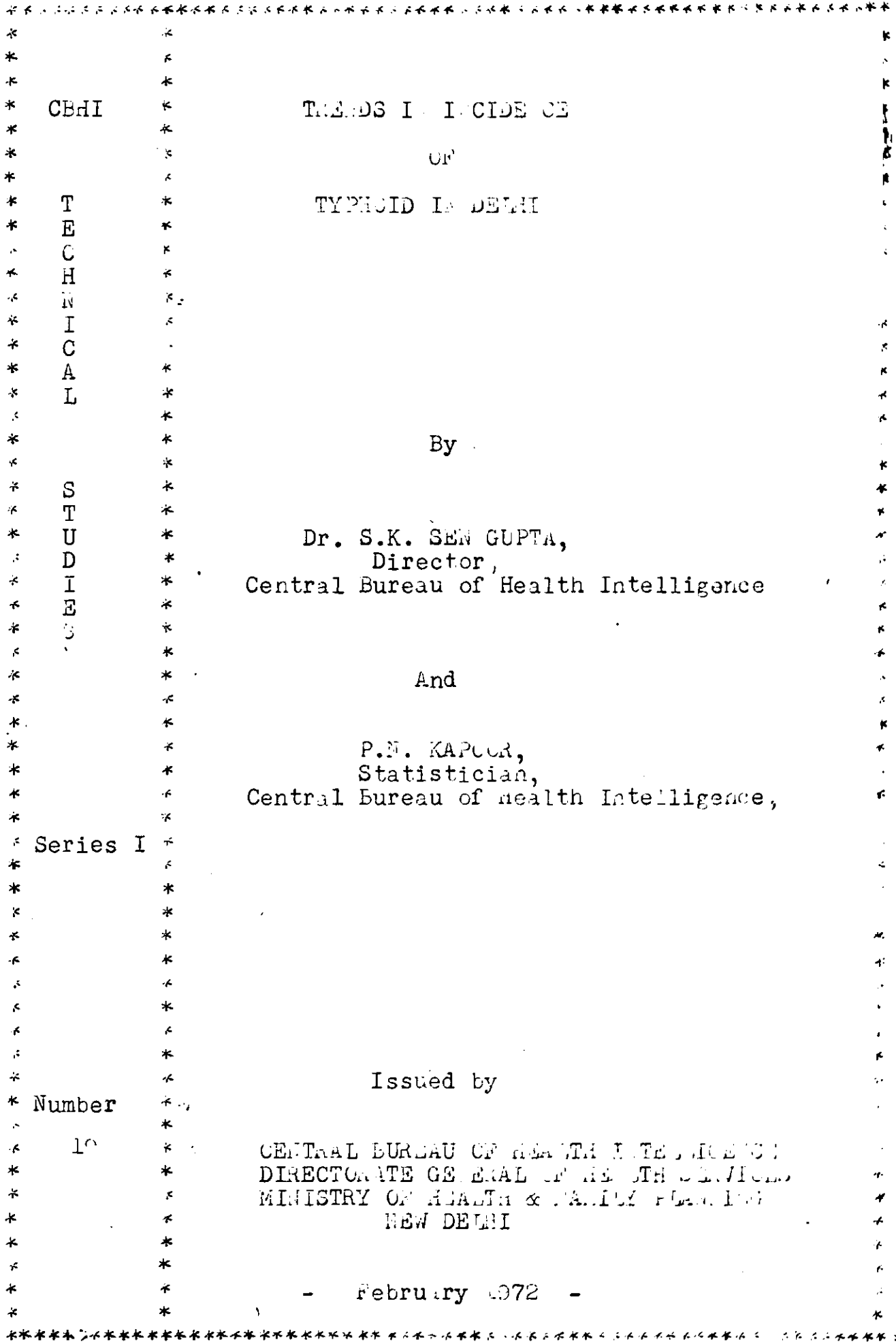
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MINISTRY OF HEALTH & FAMILY PLANNING
NEW DELHI

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Opinions and Views expressed in this publication are those of authors and not necessarily of Government of India.

(i)

Trends in Incidence of Typhoid in Delhi

By

Dr. S.K. Sen Gupta and P... Kapoor

1.0 INTRODUCTION

Typhoid is one of the most important communicable diseases and is a major public health problem in the country. Typhoid which accounted for 2.11% of indoor deaths in 9 States and 4 Union Territories during 1962-64, ranked 10th amongst the principal causes of death in the country. Further, according to data on medically certified deaths in Rajasthan, Bombay, Poona and Nagpur during 1962-64 typhoid accounted for 0.48% of total deaths (S.K. Sen Gupta and P.A. Kapoor 1971) Ref. 1. The proportionate death rate during 1962-64 according to indoor deaths was highest in A & N Islands (4.22%) followed by Rajasthan (4.02%), Orissa (3.25%), Goa, Daman & DiU (3.5%), Mysore (3.01%), Tripura (2.86%), Tamil Nadu (2.52%) and Madhya Pradesh (2.17%). Similarly, typhoid was responsible for 1.77% of total morbidity according to data relating to in-patients treated in 9 States and 4 Union Territories, and ranked 15th amongst leading individual causes of morbidity. Proportionate case rate for typhoid (i.e. cases of typhoid expressed on percentage of cases of all diseases) was highest in Rajasthan (2.86%) followed by Tripura (2.51%), Orissa (2.26%), Madhya Pradesh (2.19%), Mysore (1.77%), Punjab (1.76%), Tamil Nadu (1.72%), West Bengal (1.65%) and Andhra Pradesh (1.59%) according to indoor cases treated during 1962-64 (Ref.1). Thus it may be seen that typhoid is one of the principal causes of morbidity and mortality in India.

A study on incidence of typhoid in Delhi was carried out by Central Bureau of Health Intelligence in 1965 covering indoor

admissions and deaths among them reported by major hospitals of Delhi. during the period 1955-63. This study covered the five hospitals viz., All India Institute of Medical Sciences, Lady Hardinge Medical College and Hospital, Safdarjang Hospital, Willingdon Hospital and Police Hospital (Ref.2).

The present study covers the period 1964-69 and the data relates to Irwin, Kalawati Saran Hospitals in addition to five hospitals mentioned above. The results of this study are given in the following sections in order to high-light (1) trends in incidence : during 1955-69, (2) Age and sex distribution of cases and deaths during 1964-69, (3) Age and sex specific case and death rates, (4) Seasonal variation and (5) Comparison in pattern of incidence between the two periods 1955-63 and 1964-65.

2.0 MATERIALS AND METHODS

As already mentioned the data covers indoor admissions and indoor deaths only in seven major hospitals of Delhi. Since the data doesn't cover all the hospitals, it doesn't represent even total in-patients treated in the institutions of Delhi, Secondly many cases of typhoid are not treated in the institutions. Therefore, the results of this study are not applicable to the entire population of Delhi. The study intends only to broadly highlight the trends in incidence of typhoid, differences in age and sex morbidity and mortality rates and variation in incidence from month to month during a year. It is once again pointed out that the results given in the following sections should not be taken as representative of population of Delhi and should be viewed in the light of limitations of the data stated above.

3.0 TRENDS IN INCIDENCE DURING 1955-69

Earlier study (Ref.2) showed an increasing trend in indoor admissions and deaths among them. Number of cases pertaining to

(iii)

residents of Delhi increased from 245 in 1955 to 534 in 1958, to 987 in 1961 and to 1076 in 1963. No significant increase in annual admissions has been observed during 1964-69 in respect of the five major hospitals i.e. All India Institute of Medical Sciences, Lady Hardinge Medical College, Police Hospital, Safdarjang and Willingdon hospitals. No. of cases relating to Delhi residents and to these hospitals is given below:-

| <u>Year</u> | <u>Cases</u> |
|--------------------|--------------|
| 1964 | 1151 |
| 1965 | 864 |
| 1966 | 1037 |
| 1967 | 811 |
| 1968 | 705 |
| 1969 | 942 |
| Total (1964-69) | <u>5570</u> |

It will be seen that after recording the lowest number of cases i.e. 705 cases in 1968, the figure rose again sharply to the level of 942 cases in 1969. Comparing the average annual admissions between the two periods 1955-63 and 1964-69, it is seen that the figure has risen from 650 to 929 average annual cases in the five major hospitals.

3.1 TRENDS IN INCIDENCE DURING 1964-69

In the above section 3.0 an idea of trend in incidence during 1954-69 was given on the basis of in-patients in five major hospitals relating to Delhi residents only. The incidence data for the period 1964-69 discussed below relates to 7 hospitals mentioned in section 1.0. Indoor cases and deaths for typhoid and para-typhoid hospital-wise and year-wise including cases from Delhi residents and

outside are given in tables I and II respectively. Totals of typhoid cases are given in table III(a). Table III(b) presents annual totals for all the seven hospitals combined, for typhoid and para-typhoid separately, with attack and death rates per lakh population and case fatality rates. Since only 24 cases with one death were recorded for para-typhoid in these hospitals during 1964-69 on compared to 11300 cases with 354 deaths of typhoid during the same period, for the purpose of analysis, the figures of typhoid and para-typhoid were grouped together. Out of 11324 cases of typhoid and para-typhoid treated in major hospitals, the largest number of cases i.e. 4894 were reported by Safdarjang Hospital followed by Irwin Hospital - 4362 and Kalawati Saran Hospital - 1118 cases. Safdarjang hospital accounted for 43.22% of total cases and Irwin hospital accounted for 38.52% of total cases admitted in 7 hospitals during 1964-69 (Table III(a)).

Table III(b) shows that largest figure of annual cases was recorded in 1964 i.e. 2512 followed by 1997 cases in 1966 and 1944 cases in 1969. Highest attack rate per lakh of population of 81.03% was recorded in 1964 and the lowest figure of 38.89 was recorded in 1968. For the other years the rate ranged between 50 and 59. After 1964 there does not seem to be any consistent trend in attack rate (Table III).

The highest death rate per lakh of population of 5.71 was recorded in 1964 and the lowest figure of 3.30 was recorded in 1965. There does not appear to be any consistent trend in death rate also.

3.1.1 PROPORTIONATE CASE RATE AND CASES PER BED

The number of cases of a disease admitted in hospitals may also be affected by the changes in the number of beds which is the index of facilities available for treatment. No. of beds increased

~~103~~ 3678 in 1964 to 4238 in 1967 and to 4608 in 1969. As such the number of indoor cases of typhoid and para-typhoid treated per bed is a useful index in having an idea of the trends in incidence. Similarly, proportionate case rate (i.e. number of typhoid and para-typhoid cases expressed on percentage of total cases of all diseases) is another useful index of assessing changes in the relative importance of a disease. An average of 0.450 cases of typhoid and para-typhoid per bed per year were recorded in seven hospitals during 1964-69 (Table IV). The highest average of 0.683 was recorded in 1964 and the lowest figure of 0.317 was recorded in 1968. For the other years, the figure ranged from 0.418 to 0.483. Further the highest number of cases per bed per year was recorded by Kalawati Saran Hospital (1.136) followed by Safdarjang (0.72) and Irwin (0.67). The lowest figure was recorded in Willingdon Hospital (0.02). Details may be seen in table IV.

Further, proportionate case rate for typhoid and para-typhoid (i.e. cases of typhoid and para-typhoid expressed as percentage of cases of all diseases) worked out to 1.23% for the period 1964-69 (Table IV). Proportionate case rate declined from 1.82% in 1964 to 1.20% in 1967 and to 1.14% in 1969 for all the 7 hospitals combined. Hospital-wise proportionate rates are also given in Table IV.

4.0 AGE DISTRIBUTION OF CASES AND DEATHS

Table V presents distribution of cases (indoor admissions) and deaths (indoor only) reported by All India Institute of Medical Sciences, Irwin, Lady Harding and Medical College hospital, Police, Safdarjang and Willingdon Hospitals for the period 1965 to 1969. Largest number of cases were reported in the age-group 10-14 years

(23.3%), followed by the age-groups 20-29 years (21.8%), 5-9 years (19.10%), 15-19 years (18.3%), 1-4 years (7.5%) and 30-39 years (5.9%), the figures in brackets indicating the percentage contribution of the respective age-groups to total cases. The age-group 40 years and above, accounted for only 3.5% of total cases whereas the age-group 5-19 years was responsible for 60.7% of total cases. Thus the age-group 5-19 years bears the maximum brunt of the disease. The earlier study of Delhi hospitals (Ref.2), showed that the age-group 5-19 years accounted for 61.1% of total cases and that 40 years and above 4% during 1955-64. No significant shift in age-distribution of cases has been noticed in the period 1965-69 as compared to 1955-64. S. Pattanayak, et al, 1970 (Ref.3), on the basis of data relating to typhoid cases in 10 teaching hospitals in India, showed that the age-groups 5-19, and 20-29 years accounted for 51.2% and 29.1% of total cases respectively, while the age-group of 40 years and above accounted for 5.8% of the cases.

Further, in the present study age distribution of male cases is not significantly different from that for female cases.

Regarding age-distribution of deaths due to typhoid and para-typhoid, the age-group 20-29 years accounted for maximum no. of deaths (23.1%), followed by the age-groups 10-14 years (19.6%), 5-9 years (19.6%), 15-19 years (15.8%) and 1-4 years (9.7%). The age-group 5-29 accounted for 75.9% of total deaths. Further, details may please be seen in Table V.

4.1 AGE-SPECIFIC CASE RATES

As already mentioned in section 4.0, the differences in the contribution of various age-groups to total cases appear to be quite significant. But then differences could also be partly attributed to the population at risk which varies from age-group to age-group

and indeed also to the fact that proportion of cases of a disease occurring in the community which get admitted to the hospitals for treatment may vary from age-group to age-group. ^{/effect of the} ~~the~~ second factor can not be assessed as complete information for total case-load in the community is not available. The first factor i.e. differences in population from age-group to age-group can be taken care of by comparing the age-specific case rates which take into account the population. The case rates per 100,000 population for typhoid and para-typhoid are given for each year alongwith the average rates for the period 1965-69 in the table VI. The purpose of the this table is only to give a broad idea of differences in age-specific morbidity. The rates are not exact since the information on second factor is not available.

Table VI shows that the highest case rate per 100,000 population was recorded by the age-group 10-14 years (92.2), followed by the age-groups 15-19 (78.2), 5-9 (66.6), 20-29 (52.1), 0-4 (21.5), 30-39 (20.2), 40-49 (12.7), 60 and above (7.4) and 50-59(7.1), the figures in brackets indicating the average annual case rates. The annual case rate varied from 17.7 to 26.1 per 100,000 population for the age-group 0-4 during the period 1965-69. The ranges for other age-groups were 49.8 to 76.4 for 5-9 years, 76.9 to 112.3 for the age-group 10-14 years, 59.5 to 93.6 for 15-19 years, 35.0 to 59.7 for the age-group 20-29, 14.5 to 24.7 for the group 30-39 years, 9.7 to 14.6 for the group 40-49 years, 4.4 to 10.7 for the group 50-59 years and 3.3 to 10.9 for the age-group 60 and above, for both the sexes combined. Sex differentials are discussed in sections 5.1 and 5.2.

4.2 AGE-SPECIFIC DEATH RATES

Death rates for different age-groups are given separately for females, males and both sexes combined in the Table VII.

It would be observed that the average annual death rate for both sexes combined during the period 1965-69 is highest in the age-group 10-14 years (6.14), followed by the age-groups 15-19 years (5.35), 5-9 (4.80), 20-29 (4.36) and 0-4 years (2.24) the figures in brackets indicating the age-specific death rates per 100,000 population. Comparatively much lower death rates are observed in the age-groups 30-39 (1.66), 40-49 years (1.80), 50-59 years (1.32 and 60 and above (1.77).

5.0 SEX-WISE DISTRIBUTION OF CASES AND DEATHS

Out of 7987 cases for which age and sex details were available for the period 1965-69, 5073 cases belonged to males and 2914 cases to females. Males accounted for 63.5% cases and females accounted ^{for} 36.5% of total cases (Table V). S. Pattanayak, et al (Ref. 3) showed that cases among males accounted for 69% of total cases and females accounted for 31% of cases in 10 teaching hospitals during 1967. It may further be observed from Table V that out of 632 indoor deaths, males accounted for 362 (57%) and females 270 (43%). Thus the sex-differential in mortality is much less prominent for deaths than for cases.

5.1 SEX SPECIFIC CASE RATES

It may be seen from table VI that higher case rate was recorded in each year for males as compared to females during the period 1965-69. Average annual case rate per 100,000 population of 51.8 was recorded among males as compared to 37.2 for females during the period 1965-69. Sex differentials in case rates are most prominent in the age-groups 15-19 years and 5-9 years, the rates for males being much higher than for females. However, in the age-group 60 and above only the rate for females (7.9) is slightly higher than for males (7.3).

5.2 SEX-SPECIFIC DEATH RATES

Table VII shows that for the period 1965-69, the average annual death rate is a little higher for males (3.69) than for females (3.44) for all the age-groups combined. There is no consistent sex differential in mortality rate from year to year during this period. It may further be seen that the death rate for males is higher in all the age-groups except 20-29 years and 30-39 years. Thus in the age-group 20-39 years, the death rate for females is higher than for males. Further, sex differentials in death rates are most prominent in the age-groups 0-4, 5-9, and 50-59 years, the rate among males being much higher than for females. For details,, see table VII.

6.0 CASE-FATALITY RATES

Case-fatality rate (i.e. deaths expressed as percentage of cases) ranged from 3.27% to 7.61, with the mean figure of 5.52% during 1955-63 (Ref.2). The present study shows an upward trend in the case-fatality rate. The rate has increased to average figure of 7.54% during the period 1964-69. During this period the lowest case-fatality rate was recorded in 1965 (6.59%) and the highest in 1968 (8.76%)(see table III (b). The rate of 7.54% for Delhi hospitals is much higher than the figure of 3.0% relating to 10 teaching hospitals (Pattanayak, et al).

6.1 AGE AND SEX SPECIFIC CASE FATALITY RATES

Table VIII shows case-fatality rates for different age-groups, separately ^{for} ~~th~~ males and females. It would be seen that Case Fatality Rate was higher for females in each year ~~than~~ than for males except for the year 1962. For the period 1965-69, Case Fatality Rate of 9.3% was recorded for females as compared to 6.7% for males.

(x)

Further, the case fatality rate is observed to be highest in the age-group 60 and above (23.9%), followed by age-groups 50-59 year (18.5%), 40-49 years (14.2%), 0-4 (10.4%), 20-29 years (8.4%) and 30-39 (8.2%). Comparatively, much lower figures of Case Fatality Rate are recorded in the age-groups 5-9 years (7.2%), 10-14 years (6.7%), and 15-19 years (6.8%).

Thus case fatality is much higher in older age-groups as compared to younger age-groups. The case fatality rate has increased considerably for the age-group 20 years and above during 1965-69 as compared to the period 1954-63. Further, S. Pattanayak et, al (2), as already mentioned, found the case fatality rate for 10 teaching hospitals to be 3.0. They also showed that the highest Case Fatality Rate was recorded in the age-group 50-54 (9.1%), followed by the age-groups 30-34 (5.6%), 15-19 (3.9%) and 10-14 (3.7%).

Case fatality rate is found to be much higher for females as compared to males in the age-groups 15-19 years, 20-29 30-39, and 40-49 years during 1965-69. However, the rates are higher for males than for females in the age-groups 5-9, 50-59 and 60 and above (Table VIII). Further details may be seen in Table VIII.

7.0 SEASONAL VARIATION

According to indoor admissions in five hospitals of Delhi viz., Kalawati Saran, Lady Hardinge Medical College, Police, Safdarjang and Willingdon Hospitals for the period 1964-69, there is a significant variation in incidence of typhoid from month to month. Table IX presents month-wise distribution of admissions for each year, percent show of each month to annual cases for each year and for the whole period 1964-69. It would be seen from column 15 of table IX, that the month of September accounted for highest no. of cases during the year i.e. 14.93% of total annual cases, followed by August (12.11%), October (11.57%), July (11.49%), June, (10.21%)

and May (8.92%). Thus the six month period May to October accounted for 69% of total annual cases. The lowest figures are recorded in the months of January, February and March. In the earlier study also, the six months period May to October accounted for a majority of the annual cases i.e. 75% for the period 1954-63 in Delhi (2). Lowest figures were recorded in months of January, February and March just as in the period 1964-69. Since a part of monthly variation in incidence depends on the number of days in the month figures of seasonal Index have been worked out after accounting for differences in the days in a month. The figures of monthly Index are given under Column 16 of table IX. Monthly figures of seasonal Index add up to 1200 for the year. Thus, if there were no variation in monthly incidence, we would expect a figure of seasonal index as 100 for each month.

It would be seen from table IX, that the highest seasonal index is recorded in the month of September (182.86), followed by months of August (143.58), October (136.96), July (136.23), June (124.84) and May (105.75). The lowest figures of seasonal index were recorded for months of January, February and March. For further details, please see table IX.

8.0 SUMMARY

Following salient features have emerged from the analysis of admission records in major hospitals of Delhi:-

(a) According to data relating to 5 major hospitals viz., All India Institute of Medical Sciences, Lady Hardinge Medical College, Police, Safdarjang and Willingdon Hospitals, average no. of annual resident cases has increased from 650 in 1955-63 to 929 in 1964-69.

(b) During 1964-69, largest no. of cases of typhoid and para-typhoid were recorded in 1964 i.e. 2572 followed by 1997 cases in 1966 and

1944 cases in 1969, according to admissions in 7 hospitals (viz., Irwin and Kalawati hospitals besides 5 hospitals mentioned at 8(a) above). The highest attack rate of 81.03 per lakh population was recorded in 1964 and the lowest rate of 38.80 was recorded in 1968.

(c) The death rate varied from 3.30 to 5.71 per 100,000 population during 1964-69.

(d) Proportionate case rate has declined from 1.82% in 1964 to 1.14% in 1969.

(e) Age-group of 5-19 years was responsible for 60.7% of total cases during 1964-69. The age-group 40 years and above accounted for only 3.5% of cases.

(f) Age-group 5-29 accounted for 75.9% of total deaths.

(g) The highest attack rate of 92.2 per 100,000 population was recorded in the age-group 10-14 years, followed by the age-groups 15-19, 5-9 and 20-29 years.

(h) The highest death rate of 6.14 per 100,000 was recorded for the age group 10-14 years, followed by age-groups 15-19 years (5.35), 5-9 (4.80), 20-29 (4.36) and 0-4 years (2.24).

(i) Males accounted for 63.5% of cases and 57% of total deaths. Females accounted for 36.5% of cases and 43% of deaths.

(j) Average annual case rate per lakh population of 51.8 was recorded for males as compared to 37.2 for females, for the period 1964-69. However, the death rate for males was only slightly higher than for females, the figures being 3.69 and 3.44 respectively.

(k) The case-fatality rate has increased from 5.52% in 1955-63 to 7.54% in 1964-69. During 1964-69, case fatality rate of 9.3% was recorded for females as compared to 6.7% for males. The highest case fatality rate is recorded in the age-group 60 and above (23.9%), followed by age-groups 50-59 years (18.5%) and 40-49 (14.2%). Comparatively lower rates are recorded in younger age-groups.

(xiii)

Further, case fatality rates is much higher for females than for males in the age-group 15-49 years.

(1) Six months period May to October accounted for 69% of total yearly cases during 1964-69. The lowest figures are recorded in months of January, February and March.

9.0 ACKNOWLEDGEMENTS

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Table No. I Indoor Cases of Typhoid treated in various hospitals in Delhi, 1964-69.

| Years | 1964 | | 1965 | | 1966 | | 1967 | | 1968 | | 1969 | | Total | |
|------------------------|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|-------|-----|
| | C | D | C | D | C | D | C | D | C | D | C | D | C | D |
| <u>Hospitals</u> | | | | | | | | | | | | | | |
| A.I.I.M.S. | 119 | 7 | 76 | - | 73 | 5 | 47 | 2 | 68 | 2 | 83 | 1 | 466 | 17 |
| Irwin | 1008 | 95 | 683 | 69 | 632 | 56 | 722 | 47 | 524 | 59 | 785 | 56 | 4354 | 383 |
| Kalawati Saran | 293 | 24 | 65 | 2 | 213 | 13 | 202 | 12 | 175 | 9 | 170 | 9 | 1118 | 69 |
| L.N.M.C.& Hospital | 62 | 3 | 57 | 3 | 74 | 9 | 86 | 7 | 40 | 2 | 59 | 2 | 378 | 26 |
| Police Hospital | - | - | - | - | - | - | - | - | - | - | 11 | - | 11 | - |
| Safdarjang Hospital | 1015 | 46 | 753 | 34 | 992 | 85 | 700 | 48 | 620 | 54 | 814 | 86 | 4394 | 353 |
| Willington Hospital | 7 | 1 | 19 | 1 | 10 | 1 | 16 | 2 | 11 | - | 16 | 1 | 79 | 6 |
| Overall Total | 2504 | 176 | 1653 | 109 | 1994 | 169 | 1773 | 118 | 1438 | 126 | 1938 | 155 | 11300 | 853 |

Notes:- C = Cases (Indoor)
D = Deaths (Indoor)
- = Nil

Table II Indoor Cases of Para-Typhoid treated in various Hospitals in Delhi, 1964-69.

| | 1964 | | 1965 | | 1966 | | 1967 | | 1968 | | 1969 | | Total | |
|-------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|
| | C | D | C | D | C | D | C | D | C | D | C | D | C | D |
| A.I.I.M.S. | 3 | 1 | 1 | - | 2 | - | 2 | - | 1 | - | 4 | - | 13 | 1 |
| Irwin Hospital | 3 | - | 1 | - | 1 | - | 2 | - | - | - | 1 | - | 8 | - |
| Kalawati Saran Hospital | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| L.H.M.C. and Hospital | 2 | - | - | - | - | - | - | - | - | - | 1 | - | 3 | - |
| Police Hospital | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Willingdon Hospital | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Total | 8 | 1 | 2 | - | 3 | - | 4 | - | 1 | - | 6 | - | 24 | 1 |

Notes:-
 - = nil
 + = Not available
 C = Indoor Cases
 D = Indoor Deaths

Table III (A) Indoor Cases and Deaths of Typhoid and Para-Typhoid in Delhi, 1964-69.

| Year | A.I.I.M.S. | | L.H.M.C.&H. | | Police | | Safdarjung | | Willingdon | | Irwin | | Kalawati Saran | | Total | |
|--|------------|----|-------------|----|--------|---|------------|-----|------------|---|-------|-----|----------------|----|--------|-----|
| | C | D | C | D | C | D | C | D | C | D | C | D | C | D | C | D |
| 1964 | 122 | 8 | 64 | 3 | - | - | 1015 | 46 | 7 | 1 | 1011 | 95 | 293 | 24 | 2512 | 177 |
| 1965 | 77 | - | 57 | 3 | - | - | 753 | 34 | 19 | 1 | 684 | 69 | 65 | 2 | 1655 | 109 |
| 1966 | 75 | 5 | 74 | 9 | - | - | 992 | 85 | 10 | 1 | 633 | 56 | 213 | 13 | 1997 | 169 |
| 1967 | 49 | 2 | 86 | 7 | - | - | 700 | 48 | 16 | 2 | 724 | 47 | 202 | 12 | 1777 | 118 |
| 1968 | 69 | 2 | 40 | 2 | - | - | 620 | 54 | 11 | - | 524 | 59 | 175 | 9 | 1439 | 126 |
| 1969 | 87 | 1 | 60 | 2 | 11 | - | 814 | 86 | 16 | 1 | 786 | 56 | 170 | 9 | 1944 | 155 |
| Total | 479 | 18 | 381 | 26 | 11 | - | 4894 | 353 | 79 | 6 | 4362 | 382 | 1118 | 69 | 11324 | 854 |
| Percent- age to all hospi- tals | 4.23% | | 3.36 | | 0.10 | | 48.22 | | 0.70 | | 38.52 | | 9.87 | | 100.00 | |

Table III (b) Indoor admissions and deaths alongwith Attack/Death rates per lakh population and Case fatality rates for Typhoid and Para-typhoid, 1964-69

| Year | Typhoid | | Paratyphoid | | Total | | Attack Rate per lakh population | Death Rate per lakh population | Case fatality rate (%) |
|--------------------------|---------|-----|-------------|---|-------|-----|---------------------------------|--------------------------------|------------------------|
| | C | D | C | D | C | D | | | |
| 1964 | 2504 | 176 | 8 | 1 | 2512 | 177 | 81.03 | 5.71 | 7.06 |
| 1965 | 1653 | 10 | 2 | - | 1655 | 109 | 50.15 | 3.30 | 6.59 |
| 1966 | 1994 | 169 | 3 | - | 1997 | 169 | 58.74 | 4.97 | 8.46 |
| 1967 | 1773 | 118 | 4 | - | 1777 | 118 | 50.77 | 3.37 | 6.64 |
| 1968 | 1433 | 126 | 1 | - | 1439 | 126 | 38.89 | 3.41 | 8.76 |
| 1969 | 1938 | 155 | 6 | - | 1944 | 155 | 51.16 | 4.08 | 7.97 |
| Over all Total (1964-69) | 11300 | 853 | 24 | 1 | 11324 | 854 | 54.44 | 4.11 | 7.54 |

Notes:- Above table is based on indoor admissions and deaths reported by A.I.I.M.S., Irwin, Kalawati, Lady Hardinge and Medical College, Police, Saffarjang and Willingdon Hospitals

- = nil, C = Indoor cases, D = Indoor deaths

Table No. IV . Typhoid and Paratyphoid Cases per bed and proportionate rates hospital-wise, 1964-69

| Yrs | L.N.M.C. & Hospital | | | | | Irwin Hospital | | | | | Kalawati Saran Hospital | | | | |
|-------|---------------------|------------------------------|------------------------------|--------------------------------------|--|----------------|------------------------------|------------------------------|---|--|-------------------------|------------------------------|------------------------------|--------------------------------------|--|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| | Beds | Indoor cases of All diseases | Typhoid & Para typhoid Cases | Typhoid & Para typhoid Cases per Bed | Proportionate case rate for typhoid & Para typhoid (%) | Beds | Indoor Cases of All diseases | Typhoid & Para typhoid Cases | Typhoid & Para typhoid Cases per typhoid & Para typhoid (%) | Proportionate case rate for typhoid & Para typhoid (%) | Beds | Indoor cases of All diseases | Typhoid & Para typhoid Cases | Typhoid & Para typhoid Cases per bed | Proportionate case rate for typhoid & Para typhoid (%) |
| 1964 | 564 | 19560 | 64 | 0.11 | 0.327 | 1068 | 45802 | 1011 | 0.95 | 2.207 | 60 | 3193 | 293 | 4.88 | 9.175 |
| 1965 | 564 | 19479 | 57 | 0.10 | 0.293 | 1068 | 41579 | 684 | 0.64 | 1.645 | 60 | 3262 | 65 | 1.08 | 1.993 |
| 1966 | 570 | 20525 | 74 | 0.13 | 0.361 | 1068 | 41917 | 633 | 0.59 | 1.510 | 177 | 4249 | 213 | 1.20 | 5.013 |
| 1967 | 570 | 22127 | 86 | 0.15 | 0.389 | 1068 | 43512 | 724 | 0.68 | 1.664 | 229 | 5217 | 202 | 0.88 | 3.872 |
| 1968 | 570 | 22066 | 40 | 0.07 | 0.181 | 1103 | 46168 | 524 | 0.48 | 1.135 | 229 | 7110 | 175 | 0.76 | 2.461 |
| 1969 | 580 | 22758 | 60 | 0.10 | 0.264 | 1103 | 49517 | 786 | 0.71 | 1.587 | 229 | 14686 | 170 | 0.74 | 1.158 |
| Total | 3418 | 126515 | 381 | 0.11 | 0.301 | 6478 | 268495 | 4362 | 0.67 | 1.625 | 984 | 37717 | 1118 | 1.136 | 2.964 |

Notes:- Proportionate Case rate is case of Typhoid and Para-typhoid expressed as percentage of Cases of all diseases treated in hospitals.

Table No. IV (Contd)

| Years | A.I.I.M.S. | | | | | Willingdon Hospital | | | | | Safdarjung Hospital | | | | |
|--------------|-------------|------------------------------|------------------------------|--------------------------------------|---|---------------------|------------------------------|--------------------------------------|--------------------------------------|---|---------------------|------------------------------|--------------------------------------|--------------------------------------|---|
| | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| | Beds | Indoor Cases of all diseases | Typhoid & Para Typhoid Cases | Typhoid & Para typhoid Cases per bed | Proportionate rate for typhoid & Para typhoid (%) | Beds | Indoor Cases of all diseases | Typhoid & Para Typhoid Cases per bed | Typhoid & Para typhoid Cases per bed | Proportionate rate for typhoid & Para typhoid (%) | Beds | Indoor Cases of all diseases | Typhoid & Para Typhoid Cases per bed | Typhoid & Para typhoid Cases per bed | Proportionate rate for typhoid & Para typhoid (%) |
| 1964 | 469 | 8845 | 122 | 0.26 | 1.38 | 350 | 10100 | 7 | 0.02 | 0.07 | 1107 | 48263 | 1015 | 0.92 | 2.11 |
| 1965 | 555 | 9754 | 77 | 0.14 | 0.79 | 510 | 10834 | 19 | 0.04 | 0.18 | 1142 | 47964 | 753 | 0.66 | 1.58 |
| 1966 | 559 | 9937 | 75 | 0.13 | 0.75 | 558 | 13607 | 10 | 0.02 | 0.07 | 1142 | 50447 | 992 | 0.87 | 1.97 |
| 1967 | 569 | 9995 | 49 | 0.09 | 0.49 | 600 | 15196 | 16 | 0.03 | 0.11 | 1142 | 49681 | 700 | 0.61 | 1.41 |
| 1968 | 750 | 11290 | 69 | 0.09 | 0.61 | 679 | 16278 | 11 | 0.02 | 0.07 | 1142 | 48245 | 620 | 0.54 | 1.29 |
| 1969 | 750 | 14144 | 87 | 0.12 | 0.62 | 679 | 17478 | 16 | 0.02 | 0.09 | 1207 | 49993 | 814 | 0.67 | 1.63 |
| Total | 3652 | 63965 | 479 | 0.13 | 0.75 | 3376 | 83493 | 79 | 0.02 | 0.09 | 6842 | 294593 | 4894 | 0.72 | 1.67 |

Table No. IV (Contd) No. of Beds, Indoor Cases of All diseases, Typhoid & Paratyphoid Cases, Proportionate admission Rate for Typhoid & Paratyphoid in Delhi, 1964-1969.

| Years | Police Hospital | | | | | All Hospitals combined | | | | |
|-------|-----------------|------------------------------|-----------------------------|-------------------------------------|---|------------------------|------------------------------|-----------------------------|-------------------------------------|---|
| | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| | Beds | Indoor Cases of All diseases | Typhoid & Paratyphoid Cases | Typhoid & paratyphoid Cases per bed | Proportionate case rate for Typhoid & Paratyphoid (%) | Beds | Indoor Cases of All diseases | Typhoid & Paratyphoid Cases | Typhoid & Paratyphoid Cases per bed | Proportionate case rate for Typhoid & Paratyphoid (%) |
| 1964 | 60 | 2669 | - | - | - | 3678 | 138432 | 2512 | 0.683 | 1815 |
| 1965 | 60 | 2703 | - | - | - | 3959 | 135575 | 1655 | 0.418 | 1.221 |
| 1966 | 60 | 2363 | - | - | - | 4134 | 143045 | 1997 | 0.483 | 1.396 |
| 1967 | 60 | 2276 | - | - | - | 4238 | 148004 | 1777 | 0.419 | 1.201 |
| 1968 | 60 | 1762 | - | - | - | 4533 | 152919 | 1439 | 0.317 | 0.941 |
| 1969 | 60 | 1793 | 11 | 0.183 | 0.613 | 4608 | 170369 | 1944 | 0.422 | 1.141 |
| Total | 360 | 13566 | 11 | 0.031 | 0.081 | 25150 | 888344 | 11324 | 0.450 | 1.275 |

Table No. V Age & Sex distribution of Cases and deaths 1965-1969
A.I.I.M.S., Irwin, Lady Harding & Medical College,
Police, Safdarjang and Willington Hospitals

| Years | Sex | Age-groups | | | | | | | | | |
|--|-----|------------|-----|-----|------|------|------|-------|------|-------|------|
| | | Below 1 | | 1-4 | | 5-9 | | 10-14 | | 15-19 | |
| 1 | 2 | 3 | | 4 | | 5 | | 6 | | 7 | |
| | | C | D | C | D | C | D | C | D | C | D |
| 1965 | M | 6 | 1 | 62 | 4 | 133 | 9 | 204 | 11 | 216 | 14 |
| | F | 6 | 1 | 42 | 1 | 91 | 8 | 157 | 8 | 96 | 13 |
| | T | 12 | 2 | 104 | 5 | 274 | 17 | 361 | 19 | 312 | 27 |
| 1966 | M | 4 | 1 | 88 | 10 | 214 | 24 | 261 | 18 | 221 | 10 |
| | F | - | - | 57 | 7 | 122 | 8 | 177 | 12 | 116 | 10 |
| | T | 4 | 1 | 145 | 17 | 336 | 32 | 438 | 30 | 337 | 20 |
| 1967 | M | 6 | 1 | 70 | 7 | 185 | 9 | 207 | 10 | 163 | 6 |
| | F | 5 | - | 41 | 2 | 129 | 8 | 128 | 10 | 92 | 4 |
| | T | 11 | 1 | 111 | 9 | 314 | 17 | 335 | 20 | 260 | 10 |
| 1968 | M | 3 | 2 | 69 | 9 | 150 | 17 | 194 | 17 | 156 | 13 |
| | F | 3 | - | 35 | 3 | 89 | 7 | 129 | 9 | 76 | 7 |
| | T | 6 | 2 | 104 | 12 | 239 | 24 | 323 | 26 | 232 | 20 |
| 1969 | M | 8 | - | 86 | 7 | 219 | 11 | 241 | 11 | 207 | 13 |
| | F | 2 | - | 49 | 11 | 143 | 9 | 164 | 14 | 115 | 10 |
| | T | 10 | - | 135 | 18 | 362 | 20 | 405 | 29 | 322 | 23 |
| Total | M | 27 | 5 | 375 | 37 | 951 | 70 | 1107 | 71 | 968 | 56 |
| | F | 16 | 1 | 224 | 24 | 574 | 40 | 755 | 53 | 495 | 44 |
| | T | 43 | 6 | 599 | 61 | 1525 | 110 | 1862 | 124 | 1463 | 100 |
| 1965-69 Percentage to total Cases & Deaths | | | | | | | | | | | |
| | M | 0.5 | 1.4 | 7.4 | 10.2 | 18.7 | 19.3 | 21.8 | 19.6 | 19.1 | 15.5 |
| | F | 0.5 | 0.4 | 7.7 | 8.9 | 19.7 | 14.8 | 25.9 | 19.6 | 17.0 | 15.2 |
| | T | 0.5 | 0.9 | 7.5 | 9.7 | 19.1 | 17.4 | 23.3 | 19.6 | 18.3 | 15.3 |

Table No.V (Contd.)

Age & Sex distribution of Cases and deaths 1965-1969
(A.I.I.M.S., Irwin, Lady Hardinge Medical College,
Police, Safdarjung and Willington Hospitals)

| Years | Sex | Age-groups | | | | | | | | | | Total | Total |
|--|-----|------------|------|-------|-----|-------|-----|-------|-----|------------|-----|-------|-------|
| | | 20-29 | | 30-39 | | 40-49 | | 50-59 | | 60 & above | | | |
| | | 8 | 9 | 10 | 11 | 12 | 13 | | | | | | |
| 1965 | M | 254 | 13 | 65 | 2 | 29 | 5 | 9 | 2 | 8 | 3 | 1036 | 64 |
| | F | 108 | 5 | 39 | 2 | 9 | 4 | 2 | - | 4 | 1 | 354 | 43 |
| | T | 362 | 18 | 104 | 4 | 38 | 9 | 11 | 2 | 12 | 4 | 1590 | 107 |
| 1966 | M | 261 | 14 | 66 | 6 | 31 | 2 | 6 | 2 | 3 | 1 | 1135 | 89 |
| | F | 131 | 26 | 24 | 4 | 3 | - | 10 | - | 4 | - | 640 | 57 |
| | T | 392 | 40 | 90 | 10 | 29 | 3 | 16 | 2 | 7 | 1 | 1784 | 146 |
| 1967 | M | 233 | 12 | 70 | 6 | 25 | 3 | 9 | 2 | 1 | 1 | 979 | 57 |
| | F | 138 | 13 | 46 | 5 | 13 | 1 | 1 | - | 3 | 1 | 393 | 49 |
| | T | 376 | 30 | 116 | 11 | 38 | 4 | 10 | 2 | 4 | 2 | 1575 | 106 |
| 1968 | M | 153 | 10 | 50 | 2 | 18 | 4 | 4 | 1 | 5 | 2 | 801 | 77 |
| | F | 93 | 10 | 21 | 1 | 10 | 3 | 3 | - | 4 | - | 463 | 40 |
| | T | 245 | 20 | 71 | 3 | 28 | 7 | 7 | 1 | 9 | 2 | 1264 | 117 |
| 1969 | M | 249 | 18 | 66 | 7 | 32 | 2 | 7 | 2 | 7 | - | 1122 | 75 |
| | F | 131 | 20 | 27 | 4 | 11 | - | 3 | 1 | 7 | 2 | 652 | 71 |
| | T | 380 | 38 | 93 | 11 | 43 | 2 | 10 | 3 | 14 | 2 | 1774 | 146 |
| Total | M | 1144 | 67 | 317 | 23 | 125 | 17 | 35 | 9 | 24 | 7 | 5073 | 362 |
| | F | 601 | 79 | 157 | 16 | 51 | 8 | 19 | 1 | 22 | 4 | 2914 | 270 |
| | T | 1745 | 146 | 474 | 39 | 176 | 25 | 54 | 10 | 46 | 11 | 7987 | 632 |
| 1965-69 Percentage to total Cases & Deaths | | | | | | | | | | | | | |
| | M | 22.6 | 18.5 | 6.2 | 6.4 | 2.5 | 4.7 | 0.7 | 2.5 | 0.5 | 1.9 | 100.0 | 100.0 |
| | F | 20.6 | 29.2 | 5.4 | 5.9 | 1.8 | 3.0 | 0.7 | 0.4 | 0.8 | 2.6 | 99.9 | 100.0 |
| | T | 21.8 | 23.1 | 5.9 | 6.2 | 2.2 | 4.0 | 0.7 | 1.6 | 0.6 | 1.7 | 99.9 | 100.0 |

Notes:- M = Males; F = Females; T = Total for Males & Females.

Table No. VI

Case Rates per 100,000 population by Age & Sex for Typhoid
& Paratyphoid in Delhi, 1965-1969

| Years | Sex | Age-groups | | | | | | | | | Total |
|-------|-----|------------|------|--------|-------|-------|-------|-------|-------|------------|-------|
| | | 0-4 | 5-9 | 10-14 | 15-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60 & above | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 1965 | M | 24.3 | 83.2 | 102.00 | 113.7 | 72.6 | 25.0 | 18.1 | 11.3 | 13.3 | 57.2 |
| | F | 17.3 | 45.5 | 92.4 | 64.0 | 40.0 | 22.9 | 9.0 | 4.0 | 8.0 | 35.5 |
| | T | 21.1 | 65.2 | 97.6 | 91.8 | 58.4 | 24.2 | 14.6 | 7.9 | 10.9 | 48.2 |
| 1966 | M | 31.7 | 93.0 | 124.3 | 110.5 | 67.8 | 24.4 | 13.1 | 6.7 | 5.0 | 60.1 |
| | F | 20.4 | 58.0 | 98.3 | 72.5 | 46.8 | 13.3 | 7.7 | 16.7 | 8.0 | 43.0 |
| | T | 26.1 | 76.4 | 112.3 | 93.6 | 59.7 | 20.0 | 10.7 | 10.7 | 5.3 | 52.6 |
| 1967 | M | 21.5 | 77.1 | 94.1 | 80.0 | 62.6 | 25.0 | 14.7 | 10.0 | 1.4 | 48.9 |
| | F | 15.9 | 61.4 | 67.4 | 54.0 | 47.6 | 24.2 | 11.3 | 1.7 | 5.0 | 38.0 |
| | T | 20.3 | 68.3 | 83.8 | 70.3 | 56.1 | 24.7 | 13.6 | 6.7 | 3.3 | 44.7 |
| 1968 | M | 22.5 | 60.0 | 84.3 | 74.3 | 38.0 | 17.2 | 10.0 | 4.4 | 7.1 | 39.3 |
| | F | 12.7 | 40.5 | 67.9 | 44.7 | 31.0 | 10.5 | 9.1 | 4.3 | 6.7 | 28.4 |
| | T | 17.7 | 49.8 | 76.9 | 59.5 | 35.0 | 14.5 | 9.7 | 4.4 | 6.9 | 31.4 |
| 1969 | M | 23.5 | 84.2 | 102.8 | 94.1 | 60.7 | 22.0 | 17.8 | 7.0 | 10.0 | 53.2 |
| | F | 16.5 | 62.1 | 82.0 | 63.9 | 42.3 | 13.5 | 9.2 | 4.3 | 11.7 | 38.9 |
| | T | 22.7 | 73.9 | 92.0 | 80.5 | 52.8 | 18.2 | 14.3 | 6.3 | 10.8 | 46.7 |
| Total | M | 26.3 | 78.0 | 101.6 | 94.0 | 59.9 | 22.6 | 14.9 | 7.8 | 7.3 | 51.8 |
| | F | 16.4 | 53.6 | 81.2 | 58.9 | 41.7 | 16.5 | 9.3 | 6.1 | 7.9 | 37.2 |
| | T | 21.5 | 66.6 | 92.2 | 78.2 | 52.1 | 20.2 | 12.7 | 7.1 | 7.4 | 45.3 |

Table No.VII

Death Rates per 100000 population by Age & Sex for typhoid
& Paratyphoid in Delhi, 1965-1969

| Years | Sex | Age-groups | | | | | | | | | Total |
|--------------------------|-----|------------|-------|-------|-------|-------|-------|-------|-------|------------|-------|
| | | 0-4 | 5-9 | 10-14 | 15-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60 & above | |
| 1965 | M | 1.79 | 4.09 | 5.50 | 7.37 | 3.71 | 0.77 | 3.13 | 2.50 | 5.00 | 3.54 |
| | F | 0.74 | 4.00 | 4.71 | 8.67 | 1.85 | 1.18 | 4.00 | - | 2.00 | 2.99 |
| | T | 1.27 | 4.05 | 5.14 | 7.94 | 2.90 | 0.93 | 3.33 | 1.43 | 3.64 | 3.29 |
| 1966 | M | 3.79 | 10.43 | 8.57 | 5.00 | 3.78 | 2.22 | 1.88 | 2.22 | 1.67 | 4.71 |
| | F | 2.50 | 3.81 | 6.67 | 6.25 | 9.29 | 2.22 | - | - | - | 4.44 |
| | T | 3.16 | 7.27 | 7.89 | 5.56 | 6.25 | 2.22 | 1.11 | 1.33 | 0.83 | 4.60 |
| 1967 | M | 2.58 | 4.09 | 4.35 | 2.86 | 3.16 | 2.14 | 1.76 | 2.22 | 1.43 | 2.91 |
| | F | 0.69 | 3.81 | 5.26 | 2.35 | 6.21 | 2.63 | 0.91 | - | 1.67 | 3.12 |
| | T | 1.67 | 3.70 | 4.76 | 2.70 | 4.48 | 2.34 | 1.43 | 1.33 | 1.67 | 3.00 |
| 1968 | M | 3.44 | 6.80 | 7.39 | 6.19 | 2.50 | 0.690 | 2.22 | 1.11 | 2.86 | 3.77 |
| | F | 1.00 | 3.18 | 4.74 | 4.12 | 3.33 | 0.50 | 2.73 | - | - | 2.45 |
| | T | 2.26 | 5.00 | 6.19 | 5.13 | 2.86 | 0.61 | 2.41 | 0.63 | 1.54 | 3.19 |
| 1969 | M | 2.12 | 4.23 | 6.52 | 5.91 | 4.39 | 2.33 | 1.11 | 2.00 | - | 3.55 |
| | F | 3.55 | 3.91 | 7.00 | 5.56 | 6.45 | 2.00 | - | 1.43 | 3.33 | 4.20 |
| | T | 2.81 | 4.08 | 6.59 | 5.75 | 5.28 | 2.16 | 6.67 | 1.88 | 1.54 | 3.84 |
| Average (1965- 69) | M | 2.75 | 5.74 | 6.51 | 5.44 | 3.51 | 1.64 | 2.02 | 2.00 | 2.12 | 3.69 |
| | F | 1.71 | 3.74 | 5.70 | 5.24 | 5.49 | 1.68 | 1.45 | 0.32 | 1.43 | 3.44 |
| | T | 2.24 | 4.80 | 6.14 | 5.35 | 4.36 | 1.66 | 1.80 | 1.32 | 1.77 | 3.58 |

Notes:- M = Males, F = Females, T = Males & Females combined.

Table No. VIII Case Fatality rates for different age groups & sexes in Delhi from 1965 to 1969

| Years | Sex | Age-groups | | | | | | | | | Total |
|------------------------|-----|------------|------|-------|-------|-------|-------|-------|-------|------------|-------|
| | | 0-4 | 5-9 | 10-14 | 15-19 | 20-29 | 30-39 | 40-49 | 50-59 | 60 & above | |
| 1965 | M | 7.4 | 4.9 | 5.4 | 6.5 | 5.1 | 3.1 | 17.2 | 22.2 | 37.5 | 6.2 |
| | F | 4.2 | 8.8 | 5.1 | 1.4 | 4.6 | 5.1 | 44.4 | - | 25.0 | 7.8 |
| | T | 6.0 | 6.2 | 5.3 | 8.7 | 5.0 | 3.8 | 23.7 | 18.2 | 33.3 | 6.7 |
| 1966 | M | 1.0 | 11.2 | 6.9 | 4.5 | 5.6 | 9.1 | 11.3 | 33.3 | 33.3 | 7.8 |
| | F | 1.3 | 6.6 | 6.8 | 8.6 | 12.8 | 16.7 | - | - | - | 10.3 |
| | T | 1.1 | 9.5 | 6.8 | 5.9 | 10.5 | 11.1 | 10.3 | 12.5 | 14.3 | 8.7 |
| 1967 | M | 10.5 | 4.9 | 4.8 | 3.6 | 5.0 | 8.6 | 12.0 | 2.2 | 100.0 | 5.8 |
| | F | 4.3 | 6.2 | 7.8 | 4.3 | 13.0 | 10.9 | 77.7 | - | 33.3 | 8.2 |
| | T | 8.2 | 5.4 | 6.0 | 3.8 | 8.0 | 9.5 | 10.5 | 20.0 | 50.0 | 6.7 |
| 1968 | M | 15.3 | 11.3 | 8.8 | 8.3 | 6.6 | 4.0 | 22.22 | 25.0 | 40.0 | 9.6 |
| | F | 7.9 | 7.87 | 7.0 | 9.2 | 10.8 | 4.8 | 30.0 | - | - | 8.6 |
| | T | 12.7 | 10.1 | 8.0 | 8.6 | 8.2 | 4.2 | 25.0 | 14.3 | 22.2 | 9.3 |
| 1969 | M | 7.4 | 5.0 | 6.2 | 6.3 | 7.2 | 10.6 | 6.3 | 23.6 | - | 6.7 |
| | F | 21.6 | 6.3 | 8.5 | 8.7 | 15.3 | 14.8 | - | 33.3 | 28.6 | 10.9 |
| | T | 12.4 | 5.5 | 7.2 | 7.1 | 10.0 | 11.8 | 4.7 | 30.0 | 14.3 | 8.2 |
| Total (1965- 69) | M | 10.4 | 7.4 | 6.4 | 5.8 | 5.9 | 7.3 | 13.6 | 25.7 | 29.2 | 6.7 |
| | F | 10.4 | 7.0 | 7.0 | 8.9 | 13.1 | 10.2 | 15.7 | 5.3 | 18.2 | 9.3 |
| | T | 10.4 | 7.2 | 6.7 | 6.8 | 8.4 | 8.2 | 14.2 | 18.5 | 23.9 | 7.9 |

Notes:- M = Males; F = Females; T = Males & Females combined.

Table No. IX

Percentage Distribution of Typhoid & Para Typhoid indoor cases by months and seasonal Index, 1964-1969

| Months | 1964 Cases | % to total | 1965 Cases | % to total | 1966 Cases | % to total | 1966 Cases | % to total | 1967 Cases | % to total | 1968 Cases | % to total | Total (1964- 69) | Mean Perce- ntage | Seasonal Index (S.I.) |
|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------------------------|-------------------------|--------------------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Jan. | 37 | 2.68 | 33 | 3.69 | 38 | 2.95 | 42 | 4.18 | 27 | 3.19 | 41 | 3.83 | 218 | 3.42 | 40.39 |
| Feb. | 28 | 2.03 | 41 | 4.58 | 48 | 3.72 | 49 | 4.88 | 32 | 3.78 | 23 | 2.61 | 226 | 3.60 | 42.59 |
| March | 49 | 3.55 | 39 | 4.36 | 48 | 3.72 | 70 | 6.97 | 31 | 3.66 | 42 | 3.92 | 279 | 4.36 | 51.77 |
| April | 102 | 7.40 | 83 | 9.28 | 105 | 8.14 | 67 | 6.67 | 23 | 2.71 | 62 | 5.79 | 442 | 6.67 | 81.52 |
| May | 132 | 9.57 | 106 | 11.85 | 118 | 9.15 | 104 | 10.36 | 49 | 5.79 | 73 | 6.82 | 582 | 8.92 | 105.75 |
| June | 152 | 11.02 | 105 | 11.74 | 156 | 12.10 | 82 | 8.17 | 69 | 8.15 | 108 | 10.03 | 672 | 10.21 | 124.84 |
| July | 160 | 11.60 | 115 | 12.86 | 158 | 12.25 | 97 | 9.66 | 91 | 10.75 | 126 | 11.76 | 747 | 11.49 | 136.23 |
| August | 180 | 13.05 | 85 | 9.50 | 194 | 15.05 | 104 | 10.36 | 99 | 11.70 | 139 | 12.98 | 801 | 12.11 | 143.58 |
| Sept. | 222 | 16.10 | 81 | 9.06 | 204 | 15.82 | 159 | 15.84 | 139 | 16.43 | 175 | 16.34 | 980 | 14.93 | 182.86 |
| Oct. | 174 | 12.61 | 80 | 8.94 | 127 | 9.85 | 125 | 12.45 | 122 | 14.42 | 120 | 11.20 | 748 | 11.57 | 136.96 |
| Nov. | | 6.16 | 88 | 9.84 | 62 | 4.81 | 63 | 6.27 | 104 | 12.29 | 101 | 9.93 | 503 | 8.13 | 99.51 |
| Dec. | | 4.20 | 38 | 4.25 | 31 | 2.40 | 42 | 4.18 | 60 | 7.09 | 56 | 5.23 | 285 | 4.56 | 53.98 |
| Total | 1379 | 99.97 | 894 | 99.95 | 1289 | 99.96 | 1004 | 99.99 | 846 | 99.96 | 1071 | 99.96 | 6483 | 99.97 | 1199.97 |

Hospitals covered are:- 1. Kalawati Saran Hospital, 2. L.H.M.C. and Hospital, 3. Police Hospital, 4. Safdarjung Hospital, 5. Willingdon Hospital.

LIST OF SOME IMPORTANT AND LATEST PERIODICALS AND
AD-HOC PUBLICATIONS AND REPORTS BROUGHT OUT

BI

CENTRAL BUREAU OF HEALTH INTELLIGENCE, DIRECTO-
RATE GENERAL OF HEALTH SERVICES, NEW DELHI

| Sl. No. | Name of the Publications/Reports |
|------------|---|
| 1. | Weekly Epidemiological Record. |
| 2. | Weekly summary of infectious diseases and quarantine restrictions in Foreign Countries. |
| 3. | Weekly summary of mortality in Chief Sea and Airports in India. |
| 4. | T.B. Atlas of India (1966). |
| 5. | W.H.O./UNICEF assisted B.C.G. Vaccination Campaign Monthly Statistical Report, (September, 1970). |
| 6. | Quarterly Progress Report regarding diagnostic and treatment activity of the UNICEF and Government of India assisted T.B. Clinics in India (September, 1970). |
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| 8. | Monthly Swasthya Samachar (June, 1970). |
| 9. | Health Statistics of India (1964). |
| 10. | Annual Report of Directorate General of Health Services (1963). |
| 11. | Health Atlas of India, (1962) and (1970). |
| 12. | Directory of Medical Colleges of India (1964), (1969) (under Press). |
| 13. | Directory of Post-graduate Medical Education (1966). |
| 14. | Directory of Hospitals in India (1967). |
| 15. | Geographical Pathology of India (1966). |
| 16. | Directory of Specialised Treatment Centres in India (1965). |

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Name of the Publications/Reports

17. A Compendium on Medical and Health Services(1963).
18. Directory of Medical Teaching Manpower in India(1966).
19. Administrative Organisational Structures of the State Health Medical Directorates in India(1967).
20. Statistical Review of Cholera Problem in India - A note(1966).
21. A study on Incidence of Diphtheria in Delhi(1964).
22. Monthly Health Bulletin,(March,1968).
23. B.C.G. Atlas of India(1966).
24. Statistical Analysis of performance of B.C.G. Campaign in India (January,1969).
25. Special Issues of Swasthya Samachar:
 - (i) Statistical Review of Small-pox Problem in India with particular reference to endemicity and epidemicity (Vol.V, No.10-A October,1965). (Also printed in the form of a Book)
 - (ii) A study on incidence of Typhoid in Delhi(March, 1965).
 - (iii) Incidence and Endemicity of Guinea-worm in India (Vol. VI, No. 12-A, December, 1966).
 - (iv) Shortage of teaching staff in the Medical College in India, (November,1964).
 - (v) Cholera in India with particular reference to endemicity and epidemicity (Vol. VII,no.5-A, May,1967). (Also printed in the form of a Book).
 - (vi) Prevalence of endemic Goitre in India(Vol. VII, No. 10-A, October, 1967).
 - (vii) Statistics at a glance(1969).
 - (viii)Why recurrence of Cholera in India(Vol. V,No.6, June,1965).
 - (ix) Directory of Hospitals in India(1965 and 1970).
 - (x) Reservation of seats for Scheduled-Castes, Scheduled Tribes and other Backward Classes candidates for admission to various Medical Colleges in India (November,1967).

| Sl. No. | Name of the Publications/Reports |
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| 26. | C.B.H.I. Technical Studies |
| (i) | Series I, No.10, Incidence and Endemicity of Schistosomiasis in India(1968). |
| (ii) | Series 2, No.11, Surveillance Report for the month of November, 1970. |
| (iii) | Series 3, No.1 Directory of para-Medical institutions in India(1966). |
| (iv) | Series 4, No.1, Epidemiological System in India (January,1969). |
| (v) | Series I, No.II, Statistical Analysis of trends in Incidence of Small-pox in India(March,1970). |
| (vi) | Series I, No.12, Statistical Analysis of trends in Incidence of Cholera in India (April,1970). |
| (vii) | Series I, No.13, Principal Causes of Death in India (October,1970). |
| (viii) | Series I No.14 pattern of Morbidity and Mortality in India with special reference to Communicable diseases November, 1971. |
| (ix) | Series I No.15 Maternal mortality in India January,1972). |
| (x) | Series I No.16 Trends in Incidence of Diphtheria in Delhi January, 1972. |
| (xi) | Series I No.17 changing pattern of cholera endemicity in India February, 1972. |
| (xii) | Series I No.18 changing pattern of Smallpox endemicity in India February, 1972. |
| (xiii) | Series I No.19 Trends in incidence of Typhoid in Delhi, February, 1972. |
| (xiv) | Series 3, No.2, Directory of Hospitals in India, 1968-69. |

Note:- Copies of the above publications are available on demand from Central Bureau of Health Intelligence except for the publications mentioned at Sl.Nos.9,11,14,15,17,21 and 25(ii)(iv),(vii)26(i) which have been totally exhausted.

However, copies of the publications at Sl.Nos.9,11, and 14 are available from the Manager, Publications Branch, Civil Lines, Delhi-6.