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A SIXTEEN YEAR TREND IN THE REGIONAL MORTALITY IN INDIA 1947-'63

Series I. Calcutta City

By

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During the twentieth century the increase of population has been very great in India. The main counterparts responsible for this alarming increase in the growth rate it is said, is due to her almost constant birth rate and rapidly diminishing death rate, while India is passing the demographic transition.

In order to curb this growth rate, while the government has taken all out efforts to bring the birth rate down by family planning and other precautinery undertakings it has also taken great public health, medical and sanitary measures. Many multipurpose plans have been passed and many more are to come.

Under the context, and due to the fact that little research has been done on the mortality aspects of the population, an elaborate analysis of the historical trend in the death rate and its causes by associated factors effecting the trend and its implications on the rate of growth seems all the more essential both from the methodological and assessment point of view. The analysis of such historical data is very much lacking in most of the underdeveloped countries including India. This paper proposes to present the other counterpart, the nature of the diminishing death rate. Such a study gives an index of the course of vital events for each particular disease associated with the material progress of the nations ; it gives an indirect measure of the public health activities in the country too. It can extend direction for the suitable modification of future public health and medical programmes.

Though the process of keeping vital events in this country is still very unsatisfactory, it is claimed that municipal corporations of big cities in India maintain efficient records of deaths and a fairly satisfactory list of causes of death. In consideration to that, on an experimental model, a systematic sample of 17000 deaths with age-sex and other available socio-economic informations were collected from the records of the Health officers' books of the cities of Calcutta, Bombay and Madras. The data were collected at every quinquenial point of time starting from 1947,—the years after independence. These data will be analysed for regional trend in death rates and in the causes of death in a series of subsequent papers.

The present paper gives a trend in death rate for the city of Calcutta based on a sample of 8185 deaths. The classification and distribution of these deaths by age and sex and by the year of occurances. (Table I.)

It is a knownfact that the decline in mortality may change the age-sex distribution of the population in the long run. As a background it can be noticed that the structure of the population has undergone changes during the period 1947-1963. There had been a downward trend of the proportion of females : 100 males in the age-group 0-4 while the same trend was noticed in the ages 5-54 but in the opposite direction. From 55 onwards,

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Table 1

Distribution, of 8185 *sample deaths for the specified years*

age group	Year	1963			1959			1955			1951			1947		
		Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
0																
0—< 1		214	169	383	221	165	386	193	152	345	214	180	394	229	222	451
1—< 5		118	114	232	102	115	217	92	106	198	110	127	237	191	193	384
5—<15		67	46	113	39	31	70	25	28	53	71	43	114	106	91	197
15—<25		43	32	75	34	38	72	40	43	83	61	74	135	113	109	222
25—<35		50	49	99	57	43	100	43	32	75	65	65	130	131	93	224
35—<45		63	32	95	57	39	96	48	32	80	61	31	92	133	61	194
45—<55		83	50	133	93	47	140	57	39	86	70	44	14	146	70	216
55—<65		119	52	171	108	55	163	83	38	121	66	44	110	97	68	165
65—<75		70	60	130	76	57	133	55	45	100	40	50	90	68	83	151
75 & above		58	79	137	72	88	160	52	51	103	35	46	81	57	78	135
Total		885	683	1568	859	678	1537	688	556	1244	793	704	1497	1271	1068	2339

Table 2

Mortality of different age groups as percentage of total Mortality (*Standardised*) 1947-63

age group	1957		1951		1951		1951		1955		1959		1963					
	Deaths	%	Deaths	%	Deaths	%	Deaths	%	Deaths	%	Deaths	%	Deaths	%	Deaths	%	Deaths	%
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
0—	5608	22.0	7915	25.7	4970	19.8	4288	19.3	3657	22.1	3090	22.6	3721	22.4	2899	22.2	3618	21.8	2951	22.6
4— 9	3471	13.6	4891	15.9	3744	14.9	4239	191.	2402	14.5	2781	20.4	2110	12.7	2340	17.9	2383	14.4	2359	18.
5—14	2269	8.9	2800	9.1	2597	10.4	1561	7.0	656	4.0	743	5.4	766	4.6	595	4.5	1203	7.3	842	6.4
15—24	1857	7.3	2598	8.4	1968	7.9	2394	10.8	1039	6.3	1105	8.1	743	4.5	778	5.9	966	5.8	696	5.3
25—34	2155	8.4	2518	8.2	2076	8.3	2229	10.1	1118	6.8	833	6.1	1238	7.5	851	6.5	1118	6.8	953	7.3
35—44	2391	9.4	1619	5.3	2042	8.1	1039	4.7	1263	7.6	832	6.1	1182	7.1	777	5.9	1290	7.8	635	4.9
45—54	2653	f10.4	1839	6.0	2380	9.5	1499	6.8	1485	9.0	760	5.6	1940	11.7	941	7.1	1683	10.2	999	7.6
55—64	2458	9.6	1988	6.5	2555	10.2	1567	7.1	2161	13.1	985	7.2	2015	12.1	1052	8.0	1967	11.9	963	7.4
65—74	1544	6.0	2530	8.2	1509	6.0	1803	8.1	1415	8.6	1190	8.7	1458	8.8	1093	8.4	1216	)7.3	1093	8.4
75 &above	1125	4.4	2068	6.7	1216	4.9	1562	7.0	1343	8.1	1341	9.8	1440	8.7	1754	13.4	1117	6.8	1579	12.1
all ages	25531	100.0	30766	100.0	25057	100.0	22181	100.0	16539	100.0	13660	100.0	16613	100.1	13080	99.8	16561	100.1	13070	100.0

Percentages Standardised for distribution of population in different years

this ratio began to diminish as time proceeded. On the whole there has been observed a steady increase in the sex-ratio during the last sixteen years. The age-distribution also changed.

Under the perspective, let us consider the general trend in mortality.

General trend :

When the mortality of different age-groups are classified as percentages of total mortality, the standardised percentages, table 2, show that the proportion of death in the infant and early childhood ages remain almost constant throughout the period. After that and beginning with age 5, upto the age of 44 this proportion began to fall though it was not steady and systematic. Percentage of mortality increased at higher ages. While comparing, the general mortality between the sexes, table 3 show that standardised death rate has come down substantially for both males and females during the period ; female rates being one and a half time in comparison to the male rates.

Table 3

Mortality rate by Sex and age groups

Age group	1947	1951	1955	1959	1963	1947	1951	1955	1959	1963
	Males					Females				
0—	218.1	193.3	142.2	144.7	140.7	312.0	169.0	121.8	114.3	116.3
1— 4	35.7	38.5	24.7	21.7	24.5	51.0	44.2	29.0	24.4	24.6
5—14 ..	8.3	9.5	2.4	2.8	4.4	11.3	6.3	3.0	2.4	3.4
15—24	5.0	5.3	2.8	2.0	2.6	12.7	11.7	5.4	3.8	3.4
25—34	5.4	5.2	2.8	3.1	2.8	14.8	13.1	4.9	5.0	5.6
35—44	8.9	7.6	4.7	4.4	4.8	f14.8	9.5	7.6	7.1	5.8
45—54	17.5	15.7	9.8	12.8	11.1	25.4	20.7	10.5	13.0	13.8
55—64	35.5	36.9	31.2	29.1	28.4	4.44	35.0	22.0	23.6	21.5
65—74	69.6	68.0	64.8	65.7	54.8	130.5	93.0	61.4	4.64	56.4
75 & above ..	68.1	181.7	200.7	215.1	166.9	277.5	209.6	180.0	235.4	211.9
All ages ..	13.5	15.2	10.7	10.9	10.8	28.8	23.2	14.6	13.8	13.6
Standardised Mate ..	15.1	14.8	9.8	9.9	9.8	30.8	22.	13.7	13.1	13.1

Total rate Standardised for population in diffeent years.

Comparison of General Mortality among males and Females

Year	Crude death				Ratio of Mortality (M/F)	
	Crude death rate		Standardised death rate			
	M	F	M	F	Crude	Standardised
1947-51	14.3	26.0	15.0	26.6	55	56
1951-55 ..	12.8	18.9	12.3	18.0	61	68
1955-56 ..	10.8	14.2	9.8	13.4	76	73
1959-63 ..	10.9	13.7	9.8	13.4	80	73

Though the decrease in the general mortality condition improved very much during the period, it was not steady all the time. Upto 1951 it improved on the whole, but the reduction was most pronounced during 1951-1955 for the females and during 1947-'55 for the males (table 4). Since 1955, there is practicly no change in the death rate. The earlier half of the period is wholly responsible for this reduction.

Table 4

Ratio of Mortality—Males to Females (F—100)

Age group	1947	1951	1955	1959	1963
0—	70	114	117	127	121
1— 4	70	87	85	89	100
5—14	73	151	80	117	129
15—24	39	45	52	53	76
25—34	36	40	57	62	50
35—44	60	80	62	62	83
45—54	69	76	93	98	80
55—64	80	105	142	124	132
65—74	53	73	104	116	97
75 & above	61	78	112	91	79
All ages	47	66	73	79	79
Standardised ratio	49	67	72	76	75

Overall Ratio Shandardised for population in different years.

The age-specific mortality curve has shifted down more smoothly for the males than for the females; the age-portion, 5-40 tapering up for the females. The age-specific curve for the males gradually eleveated for the elder ege-groups and no definite pattern was to be found in that of the females. This is due to the fact that there had been considerable decline in the death rate in all ages except the elder age group where it had sometimes a tendency to increase.

The general improvement in the mortality ratio (table 4), between males and females was perceived in all ages but it was not at the same rate every where. Sometimes it crossed the optimum and went further. The relatively greater number of deaths among the males caused to bring the sex-ratio in favour of the females. The change was to the extent of 70%.

Infant mortality :

Except for the first quinquenial period where it decreased considerably, the percentage of mortality continued to increase upto 1963 (table 5).

Decrease in female mortality at this age was about 47% in 1951 and it came down to 60% in 1955; for the males this reduction was only 35%. After that no change could be noticed. Infant mortality for the males came down from 218.1 in 1947 to 142.0 in 1955; after that it was almost of

Table 5

Still births and Deaths among infants during the first year of life (% by age)

Year	Sex	Still births	Deaths among live born in the age of							
			Within 24 hrs.	Within IWK	IWK 1	Total 0—1 month	1—3 months	3-6 months	6-12 months	1m-1yr Total
1947	M	7.77	9.1	11.5	17.3	37.9	16.9	14.0	31.3	62.2 100.1
	F	5.49	7.7	15.3	15.3	38.3	17.9	12.8	31.1	61.8 100.1
1951	M	5.61	15.7	24.0	12.7	52.4	15.7	14.0	17.9	47.6 100.0
	F	4.64	11.2	11.7	17.6	40.5	21.3	13.3	25.0	59.6 100.1
1955	M	4.63	12.9	20.6	20.6	54.1	19.1	9.1	17.7	45.9 100.0
	F	3.78	8.3	91.7	17.8	45.8	15.9	13.4	24.8	54.2 99.0
1959	M	3.73	13.2	20.9	24.7	58.8	13.2	8.5	19.6	41.3 100
	F	2.55	9.1	20.6	21.1	50.8	11.4	12.6	25.1	49.1 ? 99.9
1963	M	3.38	11.8	17.5	23.6	52.9	13.5	14.4	19.2	47.1 100.0
	F	10.5	10.5	26.5	47.5	16.6	9.4	26.5	52.5	52.5 100.0

the same order. For the females the fall was quite sharp upto 1959. It came down from 312.0 to 114.3 by this period.

The ratio of mortality increased steadily. Starting with a ratio of 70 it crossed the female and rose to 127 in 1939; A slight tendency of reverting itself can be observed during the last five years.

Analysing the trend in the still births and in the per cent of death by section of the infant group, one favourable change can be noticed. May be, due to more and more facilities in antenatal care made available to the pregnant mothers there has been a drastic fall in the proportion of still births since 1947 (table 5). It has come down consistently from 6.63 per 1,000 (live and still births) to half this figure within sixteen years.

Excluding the still births, while the proportion of deaths in the neonatal period increased progressively during 1947-63, it decreased in the same way with slight variation in 1963 for the whole of the postneonatal period. Considering the rates of mortality in the perinatal and infant group (Table 6), it can be observed that except for slight irregularities, while perinatal mortality fall down almost steadily, no indication of any positive trend was found with the deaths in the first week or first month. So the fall in the perinatal death rate may be acredited to the fall in still births. But for some variation, the percentage fall in the death rate of the infants in the post-neonatal group, was almost steady. It can therefore, be presumed that though public health and environmental hygiene related to deaths in the post-neonatal period may have improved, the death below that period could hardly be checked.

The relative proportion of deaths between males and females which was much nearer to 100 moved more and more and exceeded the females by nearly 50 per cent.

Age-group 1-4 :

Since 1947 a positive tendency of the percentage of mortality to increase can be observed in both males and females.

The decrease in mortality for the females was about 13% in 1951 while for the males it increased to about 8%. Relative to 1951, this reduction in 1955 was about 45% on the average. Mortality increased to about 50% during the last five years.

The age specific mortality rate came down from 43.3 to 24.5 with a total reduction of 30% for males and 50% for the females. The maximum fall having been realised in 1951-55. The sex-ratio stopped at an optimum level with a linear increase from 70 in 1947.

Age group 5-14 :

But for slight increase in 1951 the percentage share of deaths decreased to 50% by 1959 with an increase afterwards.

The highest reduction in mortality was appreciated in this age-group. The reduction was 79% for males in 1959 as against 71% for females in 1933, with gradual deterioration there after. The percentage reduction for the males was maximum between 1951-1955 with a relative figure of 25 as against 100 in 1951.

As for the improvement in the decrease of mortality position the relative condition of deaths between the sexes also showed all along improvement.

Age group 15-34 :

Percentage share of mortality in the age-group behaved in a similar fashion as the previous age-group.

Relative to 1947 mortality rate came down to one half and to one third respectively during the period of sixteen years. As in the other groups the more drastic fall was to be observed in 1951-55, which was the general mortality situation. The ratio of mortality which started in a much unfavourable condition recovered 90% of its position and rose to about 63 per 100 females.

Age group 35-44 :

There was a great relief in the mortality situation in this age group due to continuous elimination of deaths for the males upto 1959 which was disturbed with a sudden rise afterwards. For the females this elimination was not uniform. A relative decrease in the mortality reduction was also noticed in this age-group to a considerable extent, with a maximum between 1951-55. Relative to 1955 no appreciable decrease can be noticed afterwards. A great divergence in the male —female mortality rates is a remarkable feature here. While the mortality rate came

Table 6

Perinatal Mortality and infant Mortality Rates

Year	Sex	Perintal Mortality per 100 total births	Deaths per thousand live births in te age of								
			under 24 hours	1 day-IKW	IWK im	—im	1—3m	3—6m	6m—1 year	im—1 year	Total 0—1year
1947	M	12.35	19.8	25.1	37.7	82.6	36.8	30.5	68.2	135.4	218.1
	F	135.8	24.0	47.7	47.7	119.5	55.8	39.8	97.1	192.7	312.1
1951	M	136.4	30.3	46.4	24.5	101.4	30.3	27.2	3.46	99.5	193.3
	F	87.4	18.9	19.7	29.7	68.2	36.0	22.5	42.2	100.7	169.0
1955	M	96.2	18.3	29.3	29.3	77.0	27.1	12.9	25.3	65.3	142.2
	F	73.5	10.1	24.0	21.7	55.9	19.4	16.3	30.2	65.9	121.7
1959	M	88.2	19.1	30.2	35.7	85.0	19.1	12.3	28.4	59.7	144.8
	F	63.3	10.4	23.6	24.1	58.1	13.0	14.5	28.7	56.2	114.2
1963	M	79.8	16.6	24.6	33.2	72.3	19.0	20.3	64.4	27.0	140.7
	F	55.3	12.2	12.2	30.8	55.13	19.3	10.9	30.8	61.1	16.3
% decrease											
1947-51	M	+20.4	+53.0	+84.8	—35.0	+22.8	—17.6	—10.8	—49.2	—26.5	——.3
	F	—35.6	—21.2	—58.7	—37.7	—42.8	—35.4	—43.4	—56.5	—47.7	—45.8
1951-55	M	—29.4	—39.6	—36.8	+19.5	—24.1	—10.5	—52.5	—26.8	—34.4	—26.4
	F	—15.9	—18.7	+21.8	—62.9	—18.2	—46.1	—27.5	—28.4	—34,5	—77.9
1955-59	M	— 8.3	+ 4.4	+ 3.1	+21.8	+10.4	—29.5	— 4.6	+12.2	— 8.5	+ 1.8
	F	—13.9	+ 3.0	—16.6	+11.0	+ 3.9	—32.9	—11.0	— 5.0	—14.7	— 6.0
1959-63	M	— 9.4	—13.1	—18.5	— 7.0	—14.9	— 0.5	+65.0	— 4.9	+ 7.9	— 2.8
	F	—12.6	+17.8	—48.3	+27.8	— 4.1	— 48.4	+24.8	+ 7.3	+10.9	+ 1.7

down to nearly one half for the males, it was about two and a half times less for the females. This fall was steady also.

Sex-ratio in mortality however, did not show any definite pattern.

Age group 45-64 :

The same feature of the variation in the share of deaths in the age-group as above is also indicated here.

Mortality rate came down steadily upto 1955. The rate of decrease slowed down for the group 55-64 but the same rate persisted for the group 45-54 thereafter.

With the highest fall in 1951-'55, the reduction in mortality upto 1955 was to the extent of 60%. The performance in reduction in the age-group 55-64 was though substantial for the females, for the males it was not to the same extent. The position of the sex-difference in mortality was again unbalanced due to relatively the greater number of male deaths.

Age group 65 & above :

Percentage mortality increased to a significant extent everywhere except for the females between ages 64-75.

The general feature of the mortality decrease was that while females improved in mortality performance to a greater extent upto 1955, the male performance was not so satisfactory. Mortality rather showed an increasing tendency in the more advanced ages towards the later period.

The sex-ratio for the age-group improved progressively and it moved nearer to hundred.

Summary findings :

(1) Mortality reduced to about 47% during the period. The reduction was more for females (57%) and less for males (35%), the maximum fall having been during the period 1951-'55.

(2) Mortality has come down at the rate of 33 per 1000 per anum for the males and 1.1 per 1000 p. a. for the females taken over the whole period. Major portion of the reduction was by 1955.

(3) Percentage of mortality increased at the older ages and decreased at the middle ages.

(4) Infant mortality has fallen to the extent of 51%, but this is mostly due to reduction in the post-neonatal period.

(5) Sex-ratio of mortality improves to a singnificant extent in favour of the females and changes its position in the opposite direction.

(6) As there was a drastic fall in mortality reduction till 1955, greater divergence in the sex-ratio was also going to be minimised, when after 1955, as the mortality was having almost a constant rate, the sex-difference in mortality also attained a constant ratio. This is interesting.

(7) After 1955, no perceptable change in the mortality condition can be perceived and this raises the question whether it has reached its biological minimum for the city or is there further chance of improvement.

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DEFAULTS IN COLLECTION AND RECORDING OF VITAL STATISTICS IN A RURAL AREA IN INDORE

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Introduction

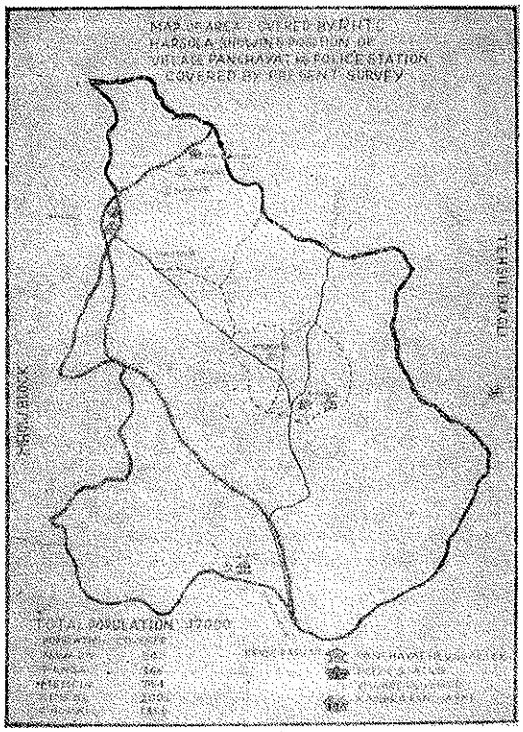
Many defaults in collection of data of births and deaths have been reported from various parts of our country. To find out exact position of the same in our state, a pilot sample survey was undertaken in the villages falling under Rural Training Centre, Harsola Department of Preventive and Social Medicine, M. G. M. Medical College, Indore.

The existing system of collection of these data in the above village is as follows :—

One village chowkidar is responsible for collecting data of births and deaths in his village and he reports the same at regular intervals to the police station under whose jurisdiction the village falls. The Police Station in turn is required to send a monthly consolidated report to the respective Civil Surgeon of the District. In some places where Panchayats are also working satisfactorily, chowkidar is required to report the data to the Panchayat in addition to the police station concerned.

Methodology

To find out the defaults in the existing system, a team of workers was drawn out of the Health Centre Staff comprising of a doctor and two sanitary inspectors who worked for the project with the help of the Secretary, Kandra Panchayat, Mhow, Officers of the police stations and the chowkidars of the respective villages. Five villages namely Nawda, Panda, Memdi, Simrol and Choral



were selected for this survey. These villages are situated in different directions of the area covered, and fall under 3 different Panchayats and 2 police stations. These represent about 30 per cent of the population covered by the Health Centre. Some of the villages are quite near to the police stations while the others are

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at some distance. The Year 1963 (from 1st. Jan. to 31st December) was selected for the study. The entries regarding the births and deaths of the above villages were collected for the above mentioned period, from the records of the chowkidars and police stations and from panchayats where ever reporting to panchayats was done.

Two sanitary inspectors were trained for making enquiries and collecting data by house to house visits in the five selected villages for ascertraining the correct births and deaths in the respective families during the period mentioned. The method of communication used was Hindi and the dates and months were also coroborated with the important festivals during one year. The information given by the head of the family or other members of the family in his absence was confirmed from others in the neighbourhood, to be sure to obviate chances of mistakes or wrong statements. These people were made to collect data with in a specified period of 10 days, from 10th to 19th of March, 1964, in a prororma drawn out for this purpose.

The informations thus obtained by family visits were compared with that available from the records of chowkidars, police stations and panchayats, and the consolidated reports sent by the police stations to the Office of the Civil Surgeon, with a view to find out the defaults at various levels.

Results

In all the 5 villages 231 births were recorded by the house to house visits, out of which only 85 were recorded by the chowkidars. Of these, Only 27 births were recorded at police stations and 21 births were recorded at the Civil Surgeons' Office; thus giving a percentage of default as 63.21, 77.50 and 90.0 per cent respectively, (Table I).

Table I

Defaults in Registration of Births recorded by Chowkidars at Police Stations and at C. S. Office

Name of villages	Total Population	By study Team-House visit	BIRTH RECORDED BY CHOWKIDARS AT POLICE STATIONS		AT C. S. OFFICE	
			No.	Default percentage	No.	Default percentage
Nawda	540	24	5	79.17	—	100.0
Panda ..	366	16	11	31.25	10	37.5
Memdi	775	40	4	90.00	2	95.0
Simrol	2002	95	32	66.12	10	89.48
Choral	1318	56	33	41.80	5	91.80
Total	5000	231	85	63.21	27	77.50

Similarly defaults have been found in the registration of deaths. Out of a total of 61 deaths noted by house visits, only 25 were recorded by chowkidars and 15 were reported at the police stations. Nineteen deaths were reported at the C.S. Office out of which 5 were not reported at the police stations at all, (Table II).

Table II

Defaults in Registration of Deaths recorded by Chowkidars at Police Stations and at C. S. Office

Name of villages	Total population	By study team—House visits	Deaths Recorded: By Chowkidars No.	By Chowkidars Defaults percentage	At Police Station No.	At Police Station Defaults percentage	At C. S. Office No.	At C. S. Office Defaults percentage
Nawda ..	540	4	3	25.0	—	100.0	—	100.0
Panda ..	540	4	3	25.0	—	100.0	—	100.0
Panda	366	4	4	Nil	4	Nil	3	25.0
Memdi ..	774	10	3	70.0	2	80.0	2	80.0
Simral ..	2002	27	15	44.45	8	70.37	10	62.97
Choral ..	1318	16	—	100.0	—	100.0	4	75.0
Total ..	5000	61	25	59.12	14	77.05	19	68.85

In addition to reporting deaths and births to the Police Station and Civil Sudgeons' Office Chowkidars are also expected to report these events to their respective panchayats. Out of 85 births and 25 deaths recorded by chowkidars only 25 births and 18 deaths were reported at the respective panchayats. (Table III)

Out of 85 births recorded by chowkidars 27 were reported at police stations while 21 were reported at panchayats and similarly out of 25 deaths recorded, 14 and 18 were reported at police stations and panchayats respectively, (Table III).

Table III

Defaults in the Births and Deaths recorded by Chowkidars, Panchayats and Police Station

Villages	BIRTHS RECORDED: House visits	Chowkidars No.	Chowkidars Difference	Panchayats No.	Panchayats Difference	Police Stations No.	Police Stations Difference	DEATHS RECORDED: House visit	Chowkidars No.	Chowkidars Difference	Panchayats No.	Panchayats Difference	Police Stations No.	Police Stations Difference
Nawda ..	24	5	19	3	21	nil	5	4	3	1	2	2	nil	3
Panda ..	16	11	5	6	10	10	1	4	4	nil	1	3	4	0
Memdi ..	40	4	36	nil	40	2	2	10	3	7	nil	10	2	1
Simrol ..	95	32	63	12	84	10	22	27	15	12	15	12	8	7
Choral ..	56	33	23	nil	56	5	28	16	nil	16	nil	16	nil	nil
Total ..	231	85	146	21	210	27	58	61	26	36	18	43	14	11

A day in the week is fixed for the chowkidars for reporting at the respective police

stations. Table IV shows the defaults in the number of visits for the period under study as well as the distance, the chowkidars have to travel for reporting.

Table IV

Distance of Police Stations from the respective Villages and Defaults in the Number of Visits by Chowkidars for one year 1963

Villages	Police Station	Distance in miles	VISITS		
			No. required	Actual No.	Default percentage
Nawda	Mohw	7	52	34	34.63
Panda	Mhow	8	52	47	9.63
Memdi	Simrol	2	52	52	Nil
Simrol	Simrol	0	52	52	Nil
Choral	Simrol	10	52	51	1.03

Note:—Village Simrol and Choral have two chowkidars in each and one of them has to visit police station alternately.

Comments and Discussion

From the above observations, it is quite eivdent that there are numerous defaults in the collection of birth and death data. Much of it is seen in the collection and reporting of chowkidars. Discrepencies are also seen in the sending of consolidated reports by the police stations to the Civil Surgeons' Office. A complete review of the working of the registration unit as a whole at various levels is necessary to throw light on these deficiencies.

Chowkidars

Most of them were illiterate and only few of them were having proper registers for recording. Many had only a copy book worth 0.12 paisa. Being unable to write they had to depend upon some local persons for recording. It was found that these data were often not recorded at the time of notification but entries were based on whatever they remembered when they come across a person who would oblige them. Moreover, the chowkidars who had registers with them did not know how to fill them properly. It was seen while checking their registers, that many deaths had been recorded in the column of births and vice a versa. None of the chowkidars had recorded the data for the complete year 1963. On the other hand one chowkidar (Choral village) had reported 9 deaths of the year 1962 under 1963. Complete registration of deaths and births mentioning name, sex, date of birth and name of parents etc. had seldom been done. It shows that chowkidars are not only illiterate but are not aware of the procedure of registration and have little realisation regarding the importance of their work. At times they make reports to the police stations with out taking their registers with them.

Reporting at Police Stations

Table IV has shown that the distance to be travelled by the chowkidars do play an important role in the number of visits made by the chowkidars to the respective police station. It was observed during the survey that chowkidars in some instances were shown as having reported to the police station, even when they did so with out their registers, as mentioned above. The omission of registers were condoned with by the police station.

Police Station

There has been evidences of negligience at

various levels as far as registration of the data is concerned. Authorities do not pay the attention called forwhile making entries of the data reported by chowkidars. Signatures of the authority taking down the data from chowkidars is required but missing in many entries. More over, defaults have been observed in the monthly reported sent from police station to the Civil Surgeons' Office in the sense that reports are sent irregularly and incompletely. (Table I and II) These factors collectively assume quite a magnitude during final tabulation. (Table III).

Mehta (1963) found in Gujrat that there was a hard core of defaults in the returns to the State Health Department. He found that the percentage of these defaults in the monthly returns were 20.4 per cent. The Registrar General (1964) has mentioned that in Maharashtra, defaults in the monthly returns submittered were found as 23.8 per cent. Similarly in West Bengal estimated birth rate and death rate were 41.8 and 12.9 respectively for the year 1962 while the officially registered figures were 23.1 and 6.0 respectively. It can thus be concluded that the system of collection of data at present is very faulty.

The Central Advisory Board of Health in 1939, (D.G.H.S. Report, 1959) had mentioned the importance of data regarding vital statistics and had recommended necessary staff at the State level. The Bhore Committee (1946) has improved upon these recommendations by suggesting four registration offices in one Primary Health Centre. Public Health Nurses and Mid-wives were to be made the registrars of births and deaths. One person at the Primary Health Centre was to be appointed solely for registration work. They had recommended the preparation of house lists for individual villages and compulsory registration in both urban and rural areas. The Committee for Vital Statistics approved the recommendations of the Bhore Committee and further recommended the preparation of Standard Certificates of births and deaths to bring uniformity in the whole country.

The Registrar General, (D.G.H.S., loc. cit) characterised the Bhore Committee recommendations as too costly and suggested that the solution of the problem of collecting data of vital statistics must be found out on the bases of village registrars appointed ex-officio ; the work of registration being only a minor part of their main duty. He further suggested that it would be found conducive to economy and efficiency to create a dual purpose office, the holder of which will serve the panchayats as its secretary and executive officer and also serve the State Government as village accountant. However at central places like that at district and at state level, he approved of the recommendations of the Bhore Committee. About enforcing the compulsory reporting of these data, he recommended that no law should be allowed to become a dead letter, but for a year or two after the first introduction of compulsion, educative propaganda was to be carried out. He also made it clear that before actual introduction of compulsory registration in any area, it was necessary to make sure that an officer is available, who can be designated as registrar, empowered to receive and register reports of births and deaths. It was also essential that the office of the registrar be located at a convenient location for all concerned.

At present panchayats are working in all most all the villages and these data are of immense value for the working of panchayats. However, the discrepencies in the data collected through Panchayats can be seen from Table III, although the chowkidar is responsible for the initial registeration. The Plan suggested by the Registrar General, (D.G.H.S. Report, loc. cit.) may work satisfactorily through the Registration Unit set at the Primary Health Centres at the Block level, if the rural population is properly educated. But at present the results will be far from satisfactory and the same has been the experience.

Suggestions

We agree with the broad recommendations made by the Bhore Committee and have the following comments to offer for improving the collection and recording of Vital Data :—

1. Registration work should be taken over by the Public Health Department at the peripheral level through Primary Health Centres. This work can be carried out in these Centres as a part of integrated services.

2. A person will be required to collect these data from houses till the people have realized their responsibilities regarding self-reporting of the same.

3. The back bone of registration unit (chowkidar, at present) must be a person who understands the importance of such data and is able to perform his functions properly. In the Conference on State Problems in Implimenting the Schemes for improvement of Registration of Vital Statistics, one of the conclusion was that the system of licensing the dais may be introduced and they may be made responsible for notifying the births, (Registrar General, 1965). Bhore Committee has suggested Health Visitors and Mid-wives for this work. No doubt they visit the community frequently but may not visit all the houses regularly at a particular interval, while for this work, a person will have to visit all the houses in the community periodically. A Basic Health Worker, as has been suggested in the IV Five year Plan can be considered as a suitable person for this work. It can be further thought of, utilising the staff of Family Planning Extension Programme and NMEP in a proper way to help in the registration work, along with their primary job.

The registration of vital statistics is an obligatory function of the newly established Gram Panchayats (M. P. Panchayat Act, 1962), under which the Gram Panchayat Secretary is made responsible for registration of primary data in place of Kotwars or Chowkidars. It is suggested that copy of this report should be sent to Primary Health Centre, where the data should be tallied with that collected by health personal by the computers and only after due verification the report be forwarded to Civil Surgeons Office from Primary Health Centre. This dual system of collection, compilation and reporting of vital statistics should continue till one satisfactory agency is established for future working.

At present, the registration system as suggested by the Registrar General (loc. cit.) should be adopted in the Primary Health Centres through the Sub-centres. Mid-wife and Social Workers in each Sub-centre should divide the area between themselves and be responsible for collection of data in a population covering nearly 10,000.

Summary

A pilot survey was undertaken in 5 villages under Rural Health Training Centre, Harsola, to find out the defaults in the collection and reporting of Vital Statistics. Defaults were observed at various levels of collection and reporting. After reviewing the relevant reports on the subject, a system of collection of data through the agencies of Gram Panchayats and staff of Primary Health Centres has been suggested with the registration unit at Primary Health Centres.

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A STUDY IN URBAN DEMOGRAPHY—ALLAHABAD

Jai Prakash Gupta*

The 1961 Census has unfolded the facts that Urban Communities in India have grown very rapidly and these communities have grown from tiny settlements to giant agglomerations. In other words, catastrophic changes have already occured and future trends are also in favour of the tremendous growth as such. To say in recent years accelerated urbanisation is under active operation in under-developed Country and these trends are creating big Centres and in the words of 'Lewis Mumford' 'metropolis', Megalopolis' 'tyrannoplis' and 'necropolis' are coming up and problems of unprecedented nature are faced by the city people. While analysing the determinants of this population explosion in urban areas it is seen that much of the changes are not occuring due to economic expansion but due to the unprecendented increase of population in India. The determinants of this population increase are the resultant factors of the surplus of births over deaths or vice versa plus the balance of immigration and emmigration. Moreover the resultant of birth over death rates or vice-versa is determined by nutritional standards, sanitary conditions, state of medical-knowledge, availability of doctors, hospitals and drugs and by other socio-economic condition of people. Allahabad an important city of Uttar Pradesh has been studied in this communication and attempts have been made to review the past trends of birth and death rates and its impact on the population growth as such. Moreover it has been reviewed and observed that the population of Allahabad since the outbreak of world war II has almost increased by more than fifty per cent without any addition to the city's open spaces, parks, playgrounds and other recreational facilities. This state of affairs should have affected the health, happiness and general welfare of the citizens of the city. Further in the course of this rapid change, acute problems of health and hygiene due to over-crowding and housing shortage should have occured, because where poor housing exists there are also to be found proverty and its attendant ills, crowding, illiteracy, poor nutrition, deliquency and ill health. In the words of Janu Horacio Buelink, Argentine Economist "Bad housing engenders a complexity of social evils that affect very unfavourably those classes of people which are economically weak, influencing powerfully the physical and moral well being of young men and women of tomorrow. Diseases, junvenile deliquency prostitution and vice find the climate in the slums most favourable to their growth", Thus the city should have been effected greatly and therefore closer study of the implications is very important for formulating the action programmes from preventive and curative health point of view.

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Growth of Population :—Trends and Causes

The period of the population growth may be divided into two groups, from 1891 to 1921 and from 1921 to present day. During the first period the population of the city declined considerably and in the later period the population increased considerbly. The ups and downs in the population have been in the following way according to the census publication.

Census year	Population	Variation from preceding decade	Percentage of variation
1901	1,72,032	—	(—) 0.2
1911	1,71,697	(—) 335	(—) 0.2
1921	1,57,220	(—) 14,477	(—) 8.4
1931	1,83,914	(+) 26,694	(+) 17.0
1941	2,60,630	(+) 76,716	(+) 4q.7
1951	3,32,295	(+) 71,765	(+) 27.5
1961	4,30,730	(+) 93,435	(+) 29.6

From this table it may clearly be seen that from 1901 to 1921 the population of the city was gradually on the decrease. The main reason of the decline were a low level of public health and famine. The reasons for the decrease of the population up to 1921 are summarised in the civic survey report published in the year 1923 and accordingly "The period of 1891 to 1901 was conspicuous because of the serious calamity of famine in 1896 to 1997 and malaria fever. There were several epidemics of plague, cholera and malarial fever and there was also a famine in 1907 and 1908, During 1911 to 21 the outstanding feature was that influenza played a great have among the people in 1918 and was preceeded by plague twice before. There was also a famine in 1912 to 1914 but in milder term and scarcity and high prices prevailed all through the decade". . . .Therefore it may be concluded that the fall in the population figure during 1891 to 1921 is not due to the decay of the town but to some extraordinary causes such as pestillence famine, insanitary conditions of the congested areas and bad enumeration in 1921.

From 1921 onwards the population of the city is gradually on the increase. From 1941 to 1951 there has been enormous rise in the population and the last decade has recorded a 29.6 per cent variation which is quite high.

Reviewing the trends of the determining factors of population growth such as birth rate, death rate and migration pattern of Allahabad city from 1948 to 1951, vital statistics reveal the following facts :—

Death Rate

Year	Population	No. of Death	Death Per 1,000
1948-49	2,99,268	4,742	15.88
1949-50	3,06,501	5,713	18.7
1950-51	3,24,894	4,679	14.4

Birth Rate

Year	Population	No. of Briths	Birth Rate per 1,000
1948-49	2,99,268	8,062	26.95
1949-50	3,06,501	8,104	26.44
1950-51	3,24,894	11,324	34.85

By inspecting the tables it is seen that birth rate always dominated death rate and the resultant of the two had increased the population of the city. At this stage one factor of mortality is worth mentioning and accordingly respiratory diseases have been the most important factor of mortality in the city. Dr. B. K. Mital as medical officer of health wrote the same fact in the annual report for 1951. Every year there is steady increase in the mortality due to respiratory disease. From 13.13 in 1933-34 it has increased to 22.61—an increase of nearly 1000 in a place where the total mortality in the year is about 5,500. Unless steps are taken to combat the disease there is every livelihood of further increase.

The period between 1951-61 has shown a growth rate of 29.6 per cent rapid urbanisation. Considering the birth, death and migration rates during the period the determining factors of population growth may be analysed. The following are the facts in this regard :—

Name of City	Birth rate 1951-61	Death rate 1951-61
Allahabad	25.35	7.90

(Source Directorate of Health U.P.)

These figures show that during this period, as a consequence of general improvement in sanitation including proper drainage of the city, availability of medical facilities and enhanced public health services the death rate has fallen considerably and the resultant between birth rate and death rate is quite big. As regards migration the facts are as follows :

MIGRANTS UPTO 1961-PLACE OF ORIGIN

A—Migrants from rural areas		percent
1. Same Distt.	32,219	38.33
2. Other Distt. (Same state)	41,834	49.77
3. Other states (within India)	10,002	11.90
Total:	84,055	100.00

B—Migrants from Urban areas		percent
1. Same Distt.	12,215	21.85
2. Other Distt.	29,796	35.30
3. Other states	13,888	24.85
Total	55,899	100.00

By inspecting the migration table it may be observed that more than 189,954 plus the persons who came from other states out of the total population of 4,30,730 persons in 1961 are migrants. These figures are quite

high and it may be concluded that a large number of persons migrated to the city during 1951-61 resulting in the population explosion in the city. At this stage the reduction of death rate and its contributions to natural growth should be borne in mind.

Population Prospectives of the City

The future growth of population can be ascertained from the past trends in population. This can be based on the percentage of increase or decrease in the past decades. Moreover demographers have through long and various experience evolved a number of widely accepted methods of population projection. Most of these methods are highly complex and require expert handling. Many of them call for various data which may not be readily available. However mathematical methods, component methods and ratio methods have been developed for calculating and estimating the future population projections. The basic assumptions in these methods are firstly that the past trend of population growth has been fairly uniform and that the same is going to hold good in the future also. Secondly it assumes that economic and social factors which influence population directly or indirectly will continue to be almost same as in the past or reflect a process of gradual evolution. These methods are not appropriate for use where important and rapid changes in social and economic conditions are expected in the foreseeable future. Though it may be possible to take account of the expected changes in socio-economic conditions, for example by assuming lower or higher arithmetic or geometrical growth it then becomes a question of conjecture. However by applying the various methods the projections of the city are drawn in the following way :—

DESCRIPTION OF PROJECTION METHOD

1. **Geometric extrapolation :**

$$P_n = P_0 \frac{(2000+ng)}{(2000-ng)}$$

Whereas P_n = Population in the year for which estimates made.
n = number of years
P_0 = population in the last census year.
g = mean decinnial rate of growth during the latest and proceeding census.

2. **Geometric Rate of Increase :**

$$P_x = P_0 (1+R)^t$$

WhereP is the population at the beginning of a period.
R = anual rate of Increase
t = period of time in year
P_x = population at the end of the period

3. **Extrapolation by means of Arithmetic Rate of Increase**

$$II_1 = II_2 + \frac{(II_2 - II_1)}{t} \times n$$

II_2 = population in the last census year
II_1 = population in the beginning of a period
t = time in years
n = number of years for which estimate is made

4. **2nd Degree Parabola :**

$$Y = a + bx + cx^2$$

a, b, c constants to be determind.
X = O, Y = population in 1941
X = 10, Y = population in 1951
X = 20, Y = population in 1961 so on.

AVERAGE OF ESTIMATED POPULATION PROJECTION BY VARIOUS METHODS

Method Used	Trend Used (Years)	1971	1981	1991
1. Geometric Extrapolation	1951 & 1961	557,815	7,22,394	9,35,532
2. Geometric rate of increase	1951 & 1961	5,58,312	7,23,664	9,38,000
3. Extrapolation by means of Arithmetic increase	1951 & 1961	5,55,935	6,27,602	7,26,038
4. Parabola of 2 nd degree	1941, 1951, 1961	5,87,756	7,07,910	8,86,655
5. Average	—	5,64,956	6,95,393	8,71,556

By inspecting the population projections of the city it may very well be imagined that the city is likely to have a large population i.e. about 9 lakhs within 25 years as such.

Density Standards and Crowded areas

For measuring the man land ratio and for finding out the relative congestion, concentration or dispersion of population, densities would have to be computed. The overall density of population in a city is the number of persons per acre. In the year 1951 the average density of population of the developed areas come to be 83.2 persons per acre. Moreover in that year ward No IV and VII were having more than 100 persons per acre. This clearly indicated that the pressure on land in these wards was very high causing unwholesome conditions. In 1951 the density of population in the central area of the city was the highest. In this regard in the same year it was observed that disease rates of various wards of the city varied and a close relationship was found between the mortality rate and the density of population of the area. The 1961 census has revealed very interesting results and accordingly after computing the density it was found that in same wards it varied 207-206 and 225 persons per acre which is quite high. The following table reveals the stated facts as much :—

Density Standards in the City

Ward no	Density person per acre	Ward Number	Density persons per acre
1	29	14	42
2	15	15	9
3	18	16	11
4	45	17	13
5	164	18	207
6	22	19	190
7	8	20	49
8	21	21	225
9	102	22	88
10	178	23	89
11	206	24	55
12	196	25	20
13	143	26	120
		27	7

By inspecting the table it is quite clear that in the city some of the areas are very over crowded having more than 225 persons per acre as such. In this regard some observation made by the scholars are worth mentioning and accordingly Sir Benjamin Richardson has laid down that "no city would be really healthy which contains more than 25 persons per acre." Some of the modern town planners are of the opinion that if the density is 40 persons per acre it may not be considered a congested area. From the figures quoted above it could clearly be seen that some of the wards in the city are densely populated and positively congested and some of the areas are sparsely populated.

Housing Shortage and Growth of Slums

A dwelling house is the third great necessity after food and clothes. It is the place where one is born and brought up and one's character in youth is moulded. It is the place where one seeks shelter from sun and rain. It provides the place for social life and relaxation. In other words all people regardless of their economic status have the right to live in an environment that would better their morale and safety. In this regard it is worth mentioning that survey after survey substantiates that a high rate of tuberculosis, intestinal and other disease invariably coincide with slum district, over crowding and cencentration of insanitary dwellings. When the housing in the city is compared with such objectives one is no doubt left with the feeling that the housing situation in the city is a paradox. Hundreds of families are still living in miserable conditions, in slum and blighted areas under conditions which sap away their health and energy. According to a survey conducted by the Urban Housing Development and Town Planning sub-committee of the working group on housing and urban development for the IV five year plan, reveals that in 1961 there was a deficit of 21,105 houses as such in the city of Allahabad under the Municipal corporation. The anticipated deficit is estimated 20,099, 38,985, 52,234 and 70,028 houses in 1966-71, 76, 81 years respectively. The details and methodology of housing deficit in the city including the cantonment is given in the next page.

For working out the need of additional houses it is assumed that every household will need one separate house. The household composition in the city is 4.7 members per household. This state of affairs clearly indicates that in the city, housing shortage is a acute problem and slums have grown considerably. The growth of slums according to

Average increase in Population and projected additional need of houses during next 15 years for Allahabad City

	Average Population	Number of Estimated House holds	No. of Houses Anticipated	Total of Additional Houses Required W. R. T. Existing Houses in 1961
1	2	3	4	5
1961	4,30,730	88,833	67,415	21,418
1965	4,95,326	1,09,065	78,405	29,660
1971	5,64,956	130,140	90,376	39,764
1976	6,37,101	1,54,866	1,01,586	53,279
1981	6,95,393	1,94,800	1,23,372	71,428

sociologists are congenial for antisocial activities, crime and sexual immorality. Juvenile delinquency begins with the lack of a proper home environment and later develops into vice, crime and prostitution. To support this statement we may site the findings of a study made in U. S. and accordingly in Cleveland, Ohio a slum area containing 25.72 per cent of city's population had 67 per cent of the city's total robberies and Juvenile delinquency, 10.4 per cent of the illegitimate birth and 21.3 per cent of the murders.

Sex Ratio

As regards the sex composition it is seen that the city has a predominantly male population. The sex ratio in the city from 1901-1961 reveals the following picture.

Census Year	Males	Females	Female per 1,000 males
1901	91,762	89,270	875
1911	96,208	75,489	785
1921	89,663	67,657	753
1931	1,40,162	76,752	766
1941	1,48,533	1,12,097	755
1951	1,85,113	1,47,187	795
1961	2,42,191	1,88,539	778

(Source Census Publications)

By inspecting the table it may be observed that female per 1,000 males in the city are proportionately inadequate because in recent years there has been excessive male migration to the city from rural areas in search of employment leaving families at home. Such trends are not healthy and are dangerous to the social health of communities, disrupting family life.

Conclusion and Summary

To conclude, it appears that conflicting conditions and forces are emerging out due to the complex process of urbanisation taking place. The city has already attained a very low death rate in comparision to the birth rate and waves of migrants from other areas are pouring into the city. Moreover, the city is likely to be industrialised resulting in population growth. Consequently differenet parts of the city will be overcrowded, slums will grow with high density rate accompained by factors that will endanger social health. As already mentioned bad housing is to a large extent responsible for the delinkuency, crime, prostitution and other social vices and therefore good clean and sanitary homes are desirable in pleasant environment. In the long run this will cost the communty less than the huge amount that will be otherwise spent on police, imprisonment and hospitalisation. In other words the environmental problems caused by rapid urbanisation will have to be tackled with great vigour and urgency.

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Editorial

VITAL & HEALTH STATISTICS

In general, the vital events on which data should be collected by the registration method are those defined as constituting the field of vital statistics, i.e. live births, deaths, foetal and infant deaths, maternal deaths, causes of death, marriage, divorces, separation, etc. Morbidity is also included in the Vital Statistics but not registered. Health workers are however primarily concerned with the health of the community or population which is not only the sum total of the individual health but also of the state of environment, of personal and impersonal services, medical care programmes, hospital and dispensary statistics, epidemic intelligence, records of preventive measures, immunisation state of population, control of communicable diseases, population growth, family planning and family welfare, medico-social services and rehabilitation, health education, health insurace and social security measures, health legislation, training facilities for medical and auxilliary and paramedical personnel, medical and public health research, etc. These items of information in addition to vital statistics now constitute Health Statistics.

A uniform and standardised method of collection of vital and health statistics is essential for every progressive nation of the world. A national statistical service not only provides the basis for informed correctly evaluated national decisions and developmental plans in health, social and political fields but also serves the international responsibilities and obligations. Quality and comparability are the two criteria on which the above obligations can be met with. Comparability can only be achieved through adoption and implementation by all nations, so far as their individual facilities permit, of the same general concept and definitions.

The Statistical Commission at their fifth session in 1950 therefore prepared a document for the improvement and standardisation of vital and health statistics. The implementation of these recommendations would improve mortality, fertility and other population data necessary for the study of basic demographic problems and the interelatoinships of demographic, economic and social factors.

The World Health Organisation on the direction of the World H ealth Assembly also requested every member country to establish a National Committee

for Health Statistics to standardise and advise on the methods of collection of vital statistics in conformity with the recommendation of the Statistical Commission, but unfortunately there is little evidence as yet of the existence of such a committee in India, although the importance of the subject has been emphasized by various organisations, committees and foreign experts. We have in India the recommendations and suggestions made in the reports of the Central Advisory Board of Health (1949), Health Survey and Development Committee (Bhore Committee—1964), Vital Statistics Committee (1949), Schemes for Improvement of Vital Statistics by the Registrar General of India (1952) and the suggestions of Dr. F. D. Linder, the then Director of National Health Survey, U.S.A. The steps already taken by the Central Government in this direction are the establishments of the office of the Registrar General of India, the Central Statistical Organisation, National Sample Survey Unit and the Bureau of Health Intelligence in the Directorate General of Health Services, New Delhi. Each state government is also expected to have its own department of Vital and Health Statistics. Attempts are being made to improve the hospital statistics by establishing Medical Records Department in the hospitals. In addition several health and national sample surveys and at least one comprehensive morbidity survey have been conducted in the country to supplement the available records of sickness and morbidity conditions.

Inspite of the above efforts, collection of vital events is still anything but satisfactory in India. The main reason is the absence of properly trained personnel at the peripheral level. In most of the places the classical chowkidar is still responsible for the collection, with obvious deficiency that has been reported many times. This issue of the Journal has a paper entitled "Defaults in Collection and recording of Vital Statistics data in a rural area in Indore" by Mittal et al. The authors suggest that the responsibility may be given to a member of the Gram Panchayat in each village and the staff of the Primary Health Centre where the Registration Unit should be located. It is undoubtedly true that the reliability of the Vital Statistics essentially depends upon the personnel who actually collect and record the event on the spot. No amount of statistical work, tabulation and despatch facilities can correct this defect. The biggest mistake of he authorities lie in their failure to give due importance to the peripheral collection and to appoint technically qualified person in the job, whose principal duty would be the collection of vital statistics including the causes of death. Instead, attempts are being made to utilize either the family planning staff or the surplus or active anti-malaria operating staff to do this job in addition to their principal duties, which only means less of efficiency in both the duties. Moreover the family planning workers will be interested to show reduction in birth rate to prove the efficiency of their campaign. If vital statistics and demographic data are considered to be the backbone of all developmental plans including that of Health, it is not important that better attention is paid in this collection.

Secondly, mortality rate being fairly low the health status of any community cannot be judged by mere mortality data which has certain inherent defects besides incompleteness. The government of India having recognized the Ayurveds and Homeopathic practitioners, they are entitled, as registered practitioners, to

certify the cause of death according to their own system. In any case, uniformity of recording of causes of death cannot be expected unless a legal status is given only to the practitioners of scientific medicine to certify death or unless a vocabulary is prepared giving the appropriate scientific causes of death corresponding to each of the terminologies used either by the Ayurveds or the Homeopaths. Of course, the latter system, in principle, does not believe in any specific cause of death.

The reliable data on mortality also can sometimes be of great value as shown by Sri B. Chakraborty in his paper on "A sixteen year trend in the regional mortality in India—1947-63—Series I. Calcutta City"—published in this issue of the Journal.

The Health Department of the Central and State Governments are the principal consumers of the Health Statistics of which Vital Statistics is only a part. The other Ministries and the Planning Commission are more interested in the demographic data. It is therefore proposed that the collection and recording of vital statistics should be the responsibility of the Health Department at both peripheral and state levels. The data thus collected through approprite trained staff can be regularly relayed to the Registrar General for their own compilation, recording and dissemination.

NOTICE TO CONTRIBUTORS

In view of the large number of approved articles pending publication and the paucity of funds available for printing, the Journal Committee of the Association has resolved to limit articles to 16 double-spaced typed foolscap papers.

Diagrams and graphs for publication should be drawn in India Ink on white glossy art paper. Photographs should be in black and white glossy print.

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A SOCIO-MEDICAL STUDY OF ADULT MALE PATIENTS ATTENDING THE GENERAL MEDICAL OUT-PATIENT DEPARTMENT OF A MEDICAL COLLEGE HOSPITAL

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Introduction

The Out-patient departments, originally designed to provide care for the indigent patients, have now become an essential element of health service in the community. The Out-patient departments remain extremely overcrowded during working hours and there is a great demand of beds in the inpatient department. The shortage of beds, staff and the heavy cost of in-patient care have considerably hastened the need of developing the out-patient departments in the country. Beside these, the pattern of disease is also changing. The incidence of major communicable disease is declining but the non-communicable and chronic disease are assuming greater importance.

Lack of physical facilities, bad location of services, fragmentation and discontinuity of medical care are some of the problems which one meets in the out-patient departments. Again, the patients may have their own problems eg. medical, social, psychological, economical or combination of all. The sick man not only expects to get a cure but desires prompt attention and sympathetic dealing.

Ginzberg (1949) has emphasized on the economic and medical advantages of Out-patient care. Collins (1960) has high lighted some of the important deficiencies in the operation of out-patient departments in the united States Army Hospitals as "Lack of continuity of doctor-patient relationship, long waits, impersonal handling of cases and crowded conditions". If such is the state of affairs in a most advanced country, no wonder that a developing country like India will have more problems and deficiencies in the running of the Out-patient medical care. Hardly any such study has been made in India, although it has been assumed that many problems exist. A small study on the working of three O.P.D'S. in West Bengal was made in 1960 by Roy and Kar (1963) and a preliminary report was published.

Materials and Methods

The object of the present study was :

(1) To obtain an integrated picture of the male adult patients attending the O.P.D. regarding their place of residence, distance travelled, socio-economic conditions, object of visit etc.,

(2) to ascertain the morbidity pattern in the O.P.D.,

(3) to ascertain how much the O.P.D. has been able to satisfy the needs of the patients,

(4) to determine the deficiencies that may be existing in the outpatient department with a view to formulate a progressive and balanced policy for better administration of the out-patient care, and

(5) to serve as base for evaluating the progress achieved in the Out-patient care after the needed measures are introduced by periodical surveys.

The place of study selected was the general medical outpatient department of the Medical College Hospital, Calcutta, with a large in-

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patient hospital of 1,400 beds for admission of cases and provides facilities for special investigations and referrals, all located in the same campus. The first author (A.L.R.) being on the teaching staff of the college at the time of this study but having no resposibility in the out-patient department was able to get the necessary facilities and cooperation to carry out this study under the guidence of the second author.

Material : In the study the patients selected were those who had completed 21 years of age. The reasons were that the information obtained from them would be dependable and that they were the main earning members of their families and subjected to good amount of stress and strain of the city life.

The average daily work load of cases attending the medical O.P.D. during the period May 1962 to December 1962 was as folows '—

Male	..	169.9
Female cases	..	173.1
Total cases	..	343.0

Methodology : Field work of the present study was started in October 1962 and was completed in May 1963. Random sampling technique was used for selection of cases from amongst male adult out-patients. The total number of patients interviewed for the study was 600 (500 old and 100 new cases). The sample constituted 3.6 per cent and 5.5 per cent of the old and new male out patients cases respectively.

Two types of schedules were used viz, 'General information' Schedule regarding the out-patient department and an 'individual patient' Schedule to record the findings of each patient in an uniform manner. Questionnaire method was applied in interviewing the individual patients at the O.P.D. Clinical examination, Laboratory findings and other investigations were also recorded in the schedule. Every attempt was made to ascertain the socio-medical problems of the patient, the extent of services received by them at the O.P.D., and how far the O.P.D. was catering to the medical needs of the patients.

Results

1. Socio-economic condition of patients : Of the total 600 patients, 70.7 per cent came from Calcutta city proper and the remaining 29.3 per cent from adjoining districts. 85.6 per cent of patients came from urban areas and 14.4 per cent were rural.

Men in the age group 22-34 years and 35-54 years formed 48.2 and 38.1 per cent of the sample respectively, the period 22-54 years being the best productive period of the life. Elderly persons (55 years and above) were only 13.7 per cent. 78.0 per cent patients were Hindus. Muslims, Buddhist and Christians were 20.5, 0.7 and 0.5 per cent respectively. 37.0 per cent patients were illiterate, 23.3 per cent had primary and 27.0 per cent had high school education. 80.5 per cent sampled populations was formed by Craftsman (20.0 per cent), Servicemen (19.2 per cent), businessmen (17.7 per cent) and labourers (23.6 per cent). 9.3 per cent patients were unemployed. The remaining 10.2 per cent cases were professionals, landlords, students, transport workers and others.

9.3 per cent patients had no income of their own and 62.0 per cent had income of less than Rs. 80/- p.m. 25.0 per cent and 3.7 per cent patients had monthly income ranging from Rs. 80/- to Rs. 150/- and Rs. 150/- p.m. to Rs. 300/- p.m. respectively. The patients were grouped in accordance with the Social classification suggested by Prasad (1961). 74.8 per cent of the sampled patients were of Social class IV (43.5 per cent) and social class V (31.3 per cent). Only 0.8 per cent patients were of social class I (Table I).

56.0 per cent patients were smokers, 13.8 per cent used Tabacco in other forms e.g. chewing or snuffing, 3.5 per cent were alcohol and opium addicts. It was found that addiction to alcohol was very high among patients of Social Class I (60.0 per cent), while smoking with or without 'pan' (betel leaf) were the common addictions in other social classes.

55.0 per cent patients had rational outlook on causation of disease. 37.7 per cent were stoic or indifferent. Only 7.3 per cent mostly illiterates, believed in supernatural

Table I

Social classification of patients attending from different residential areas

Social Class	Per capita income in family per month	Calcutta		Howrah		Hooghly		24-Parganas		Other districts		All districts		
		Number	Percentage in the class	Number	Percentage in the class	Number	Percentage in the class	Number	Percentage in the class	Number	Percentage in the class	Number	Percentage of all classes	
Class I (Rich)	Rs. 100 and above	4	80.0	1	20.0	—	—	—	—	—	—	5	0.8	
Class II (Upper middle)	Rs. 50—99	35	85.4	3	7.3	—	—	2	4.9	1	2.4	41	6.8	
Class III (Lower (middle)	Rs. 30—49	78	74.3	10	9.5	5	4.8	10	9.5	2	1.9	105	17.5	
Class IV (Poor)	Rs. 15—29	185	70.9	33	12.6	10	3.8	31	11.9	2	0.8	261	43.5	74.8
Class V (Very poor)	Below Rs. 15/-	122	64.9	22	11.7	6	3.2	34	18.1	4	2.1	188	31.3	
All classes		424	70.7	69	11.5	21	3.5	77	12.8	9	1.5	600	99.9	

Table II

Distribution of diseases in the sample arranged according to the International Classification of Diseases (W. H. O. 1957)

Sl. No.	Causes of morbidity	Code number in List C of the International Classification of Diseases (W.H.O., loc. cit)	Number of patients	Percentage	Remarks
1.	Turberculosis of respiratory system	C 1	24	4.0	
2.	Tuberculosis, other forms.	C 2	6	1.0	
3.	Dysentery, all forms	C 5	48	8.0	
4.	Other infective diseases arising in intestinal tract	C 6	3	0.5	Enteric fever 3
5.	Malaria	C 9	3	0.5	
6.	Diseases due to helminths	C 10	32	6.3	
7.	All other diseases classified as infective and parastic	C 11	30	5.0	
8.	Malignant neoplasms	C 12	6	1.0	Carcinoma liver..2, cancer of stomach 4
9.	Diabetes mellitus	C 16	2	0.3	
10.	Avitaminosis and other deficiency	C 17	18	3.0	
11.	Anaemias	C 18	8	1.3	
12.	Psychoneurosis and psychosis	C 19	19	3.2	
13.	Vascular lesions affecting central nervous system	C 20	2	0.3	
14.	Chronic rheumatic heart diseases	C 24	10	1.7	
15.	Arterio-sclerotic and degenerative heart diseases	C 25	4	0.7	
16.	Hypertensive disease	C 26	13	2.2	
17.	Diseases of veins	C 27	3	0.5	
18.	Acute nasopharingitis (comon cold).	C 28	6	1.0	
19.	Acute pharyingitis, tonsillitis etc.	C 29	2	0.3	
20.	Influenza	C 30	14	2.3	
21.	Bronchitis	C 32	70	11.7	
22.	All other respiratory diseases	C 34	36	6.0	
23.	Diseases of stomach and deodenum except cancer	C 35	95	15.8	Peptic ulcer..84 (i.e...14%)
24.	Appendicitis	C 36	4	0.7	
25.	Hernia of abdominal cavity	C 37	1	0.2	
26.	Diarrhoea and enterits	C 38	30	5.0	
27.	Other diseases of digestive	C 40	38	6.3	
28.	Nephritis and nephrosis	C 41	7	1.2	
29.	Diseases of male genital organs	C 42 (1)	3	0.5	Impotency .... 1 Hydrocele 2
30.	Other diseases of skin	C 45	1	0.2	
31.	Arthritis and rheumatism (except rheumatic fever).	C 46	21	3.5	
32.	Diseases of bones and other	C 47	1	0.2	
33.	Other specified and all defined diseases...	C 49	34	5.7	Nerve diseases ..17 blood diseases 9 other diseases..3 and undiagnosed cases....5.
34.	Accidents, poisoning and violence (external cause).	C 50	4	0.7	
35.	Occupational accidents and occupational poisonings	C 50 (a)	2	0.3	Chronic lead poisoning 2
	Total		600*	100.0	

* A patient may have more than one disease but his principal disease has only been shown in the Table.

powers or wrath of God as cause of disease. It was seen that rational outlook on disease causation progressively increased with the level of education.

2. Family Organisation and dwellings of patients.

Majority of patients (43.5 per cent) belonged to joint families. 32.6 per cent and 23.8 per cent patients had unitary and 'otherwise type' (either living alone of in mess or board ing house) families. 60.0 per cent among the social class I and 46.4 per cent among social class II belonged to unitary families, but majority (40 to 48 per cent) in social classes III, IV and V came from joint families. 52.5 per cent patients came from small or average size families i.e. having 1-5 members, 41.5 per cent belonged to large size i.e. having 6 to 10 members and patients coming from very large size families (i.e. 11 members or more) were 6.0 per cent. It was observed that 87.5 per cent patients from large families and all the patients from very large families had come from social class IV and V.

63.0 per cent patients were married, 28.0 per cent were unmarried. Widowers, divorced and seperated cases were 7.5, 1.2 and 0.3 per cent respectively.

33.3 per cent came from 'Bustees' which are slums and 2.3 per cent were pavement dwellers, the influence of slum conditions on discase causation must have been great. Amongst Bustee dwellers 63.5 per cent lived in semi-pucca houses. 61.7 per cent patients came from 1-roomed tenements and another 24.3 per cent from 2-roomed tenements. Of the 370 patients living in one-roomed houses as many as 108 or 29.2 per cent were having 6 to 10 members in one room. It was also seen that 92.5 per cent of the patients living in 'Bustees' had rented houses, while only 49.2 per cent patients of non-Bustee area were residing in rented houses.

3. Morbidity Pattern : 67.8 per cent patients were confined to the following ten groups of diseases mostly preventable (Table II), (i) Diseases of stomach and duodenum except cancer (ii) bronchitis (iii) dysenteries (iv) other diseases of digestice system (v) Helminthic diseases (vi) Infective and parasitic diseases (vii) Diarrhoea and enteritis (viii) Tuberculosis of respiratory system (ix) Arthritis and rheumatism (x) psychoneurosis and psychoses.

It was observed that diseases of heart and blood pressure and cases of psychoneurosis and psychoses showed greater prevalence in the upper middle class, whereas gastro-intestinal diseases (protozoal and helminthic), pulmonary tuberculosis and nutritional disorders were high in the lower social classes and the maximum brunt in majority of the diseases was borne by social class IV.

71.0 per cent patients were chronic and 17.0 and 12.0 per cent were in acute and subacute stage of illness. 68.8 per cent cases were suffering from non-communicable diseases.

4. Motivating factors for attending the O.P.D.

Many patients had more than one agency of treatment but broadly it was found that 46.7 per cent patients had treatment from general practitioners, 45.7 per cent from other clinics, 18.8 per cent had no treatment and 1.5 per cent had specialist treatment. 15.0 per cent had been to quacks, 18.2 per cent to other agencies. When reasons for discontinuing previous treatment was considered, it was found that 36.0 per cent did it for financial or other reasons and 34.6 per cent had no improvement.

29.8 per cent patients preferred the O.P.D. for specialist services and 25.5 per cent were referral cases. on financial ground only 24.0 per cent attended the O.P.D. and 8.3 per cent attended due to proximity of their houses. 47.2 per cent patients had no referral agency, 27.3 per cent were referred by friends, relations, neighbours or employers, 20.5 per cent by institution and 5.0 per cent by general practitioners. 76.0 per cent patients attended for treatment only and 19.7 for admission and treatment. 2.2 per cent each same for investigations and follow up.

5. Visits to the O.P.D. in relation to present illness.

34.2 per cent attended the O.P.D. between 13 to 52 weeks of illness and another 30.7 per cent after 52 weeks, 91.3 per cent

chronic cases coming in these groups. Only 11.2 per cent attended the O.P.D. within one week of illness, 60.8 per cent of the acute cases falling in this group. 66.6 per cent of the subacute cases attended between 5 to 12 weeks. 54.2 per cent paid 1 to 3 visits and 8.5 per cent more than 10 visits. The average number of visits in the sample was 1.5 per week, the maximum (1.9 visits per week) by gastro intestinal disease group, the minimum (0.9 visits per week) by blood disease group. Most of the preventable diseases had more than 6 visits at the O.P.D.

6. Findings about the O.P.D.

(1) **Waiting time :** 73.0 per cent patients had to wait at the O.P.D. for more than 90 minutes including 14.8 per cent who waited for 151 to 180 minutes before they were examined by the doctor. But once their turn came, as high as 87.6 per cent could leave the O.P.D. within 30 minutes. Thus the time needed for clinical examination and receiving medicine was not responsible for holding the patients. There was no patient who could leave the O.P.D. after getting treatment within 30 minutes.

(2) Time given for clinical Examination : During first visits, in 68.0 per cent patients 4 to 7 minutes were tagen for clinical examination. In revisits 45.6 per cent patients were examined in only 1 to 2 minutes and none was examined for more than 6 to 7 minutes (Table III).

(3) Diagnostic facilities utilised : The records of 500 old patients revealed that 47.4 per cent cases were diagnosed on clinical examination only. Of the reaminining, 48.4 per cent had laboratory examination for confirmation, 12.0 per cent were referred to other departments and 3.8 had special investigations namely X ray etc ; 58 or 11.6 per cent cases among these had more than one diagnostic facilities. Examination of stool, urine and blood was generally popular, stool examination prepondering over others. Sputum examination was done only in 19.0 per cent of the pulmonary tuberculosis, 6.7 per cent of neurosis and 1.8 per cent of other respiratory diseases groups. No X-ray was done for the pulmonary tuberculosis group at the medical O.P.D. but 71.4 per cent of them were referred to chest clinic for confirmation of diagnosis and treatment. Only 7.0 per cent patient were examined by Senior Medical Officers.

(4) Opinion of patients about the O.P.D. services. 67.8 per cent patients were satisfied with the sympathetic doctor's attitude during their first visit. During revisits, however, only 26.8 per cent felt that doctor's attitude was sympathetic, the remaining 73.2 per cent remained dissatisfied. 80.6 per cent patients considered repeated visits justified, 74.2 per cent felt lack of doctor's care towards patients. 62.4 per cent pointed out various administrative deficiencies, and 36.6 per cent considered that there was shortage of staff. The main suggestions of patients about better-

Table III

Distribution of patients according to the time taken for clinical examination during the first visit (as stated by the patient)and the revisit of the O.P.D.

Visits	TIME FOR CLINICAL EXAMINATION (IN MINUTES)								Total cases
	1-min.	2-min.	3-min.	4-min.	5-min.	6-min.	7-10 min	11-15 min.	
1. First visit:									
(i) Number		26	42	103	210	95	100	24	600
(ii) Percentage		4.3	7.0	17.2	35.0	15.8	16.7	4.0	100.0
					68.0				
2. Revisit*:									
(i) Number ..	27	228	120	77	26	22	..	..	500
(ii) Percentage ..	5.4	45.6	24.0	15.4	5.2	4.4	..	..	100.0

* Time taken for clinical examination of revisit cases was as observed on the date of the interview of the patients by the first author (A. L. R.)

ment of O.P.D. services were : 40.3 per cent suggested better medical attention and sympathy from doctors especially during revisits, 37.0 per cent suggested increased sitting accomodation in waiting room, 33.3 per cent suggested increased admission facilities and 19.5 per cent for reduction of overcrowding by various measures.

to be found in social classes IV and V (Table IV). Contrary to it none of the patients of Social class I and II had any economic problems. Social problems were more encountered in Social classess I and II, their percentages being 40.0 and 36.0 respectively, but were minimum in social class V (6.3 per cent).

Table IV

Distribution of patinents having personal problems according to their social classification

Social Class	PROBLEMS CONNECTED WITH THE PATIENTS								Total cases
	PROBLEMS CONNECTED WITH PATIENTS								
	No problems		Social problems		Economic problems		Other problems		
	Number	Percentage of the total in the class	Number	Percentage of the total in the class	Number	Percentage of the total in the class	Number	Percentage of the total in the class	
Class I	..	..	2	40.0	..	..	4	80.0	5
Class II	12	29.3	15	36.6	..	..	21	51.2	41
Class III	30	28.6	18	17.1	42	40.0	51	48.6	105
Class IV	33	12.6	39	14.9	213	81.6	72	27.6	261
Class V	3	1.6	12	6.3	183	97.3	90	47.9	188
All Classes	78	13.0	86	14.3	438	73.0	238	39.7	600

7. Socio-medical problems of the patients :

(i) **Economic Loss due to illness :** Loss of job due to illness was not a big problem in any social class. Only 7.7 per cent had lost job due to illness. Loss of income from illness was a great problem in 58.3 per cent cases, more so in social class V (62.8 per cent). Of these, who suffered loss of income from the present illness, 22.5 per cent suffered a loss ranging from Rs. 1 to Rs. 50, 14.7 per cent from Rs. 51 to Rs. 100, 14.2 per cent from Rs. 101 toRs. 300 and 7.0 per cent above Rs. 300. In subacute cases 63.9 per cent had suffered a loss of income. This was probably due to the fact that in chronic stage a person may do some work and may have some income, and in acute cases the period of incapacitation is short and patient may draw wages while ill or may not feel the economic loss.

(ii) **Personal problems :** 73.0 per cent patients had economic problems, these were

Social problems covered housing problems, children's education, daughter's marriage, absence of harmonious adjustment in the family resulting in disintegration of family, excessive family ambition attended by frusration, sense of isolation attended by frustration in case of single person, unmarried or widower etc. Other problems included loneliness, indifferent health, old age problems etc.

(iii) Problems of physical facilities in the O.P.D. 58.3 per cent patients were not satisfied with sitting arrangements, 46.7 per cent and 82.8 per cent were dissatisfied with smoking and spitting facilities respectively. Most dissatisfied group regarding spitting facilities were Social Class I and II their percentages being 100.0 and 87.8 respectively. 47.2 per cent patients expressed that toilet facilities were not satisfactory and here again the most dissatisfied group was social class I (60.0 per cent).

Table V

Distribution of patients showing the distance travelled, main conveyance used and average expenditure per mile travelled by patients for attending the O.P.D. (Single journey).

Groups in the Distances travelled (miles)	MAIN CONVEYANCE USED:												TOTAL PATIENTS	
	No. conveyance (on foot)		Train		Tram		Bus		Rickshaw		Others (Taxi etc.)			
	Number	Percentage of the distance group	Number	Percentage of the distance group	Number	Percentage of the distance group	Number	Percentage of the distance group	Number	Percentage of the distance group	Number	Percentage of the distance group	Number	Percentage
0— 1	138	90.2	—	—	9	5.9	—	—	3	1.9	3	1.9	153	25.5
1— 5	72	25.5	3	1.1	99	35.1	102	36.1	6	2.1	—	—	282	47.0
5—10	—	—	24	30.8	9	11.5	45	57.7	—	—	—	—	78	13.0
10—15	—	—	36	85.7	—	—	6	14.3	—	—	—	—	42	7.0
15—20	—	—	6	50.0	—	—	6	50.0	—	—	—	—	12	7.0
20 and above	—	—	27	81.8	—	—	6	18.2	—	—	—	—	33	5.5
Total	210	35.0	96	16.0	117	19.5	165	27.5	9	1.5	3	0.5	600	100.0
Average expenditure per mile travelled in paisas*		Nil		3.4		2.7		4.7		25.4		50.0		

* A paisa is one hundredth of a rupee (a rupee is equivalent to 1s. 6d.).

(iv) Distance travelled and conveyance used : 47.0 per ecnt of patients came to O.P.D. from a distance of 1 to 5 miles. Regarding type of conveyance used, 35.0 per cent came by foot and 27.5 per cent by bus. The expenditure incurred on conveyance for attending O.P.D. showed maximum (50.0 paise per mile) by Taxi and minimum (2.7 paise per mile) by Train (Table V).

Summary

1. A random socio-medical study of adult male medical outpatients of medical college hospital, Calcutta showed 70.7 per cent patients came from calcutta city. 86.3 per cent men were in the age groups 22-54 years.

2. 74.8 per cent patients belonged to Social Class IV and V. 55.0 per cent had rational outlook on disease. One third came from Bustees and 2.3 per cent were pavement dwellers.

3. 70.0 per cent diseases were preventable. 71.0 per cent patinets were chronic, 92.4 per cent patients had previous treatment from general practitioners and other clinics. 76.0 per cent patients visited O.P.D. for treatment only. 34.2 per cent attended the O.P.D. between 13 to 52 weeks of illness. The most of the preventable diseases had more than 6 visits.

4. Nearly three fourth patients had to wait for more than 90 minutes but once their turn came 87.6 per cent could leave O.P.D. within 30 minutes. In first visit 4 to 5 minutes and in revisits 1 to 2 minutes were taken for clinical examination. 47.4 per cent were diagnosed on clinical examination only, 12.0 per cent were referred and 3.8 per cent had special investigations. Only 7.0 per cent patients were examined by Senior medical officers.

5. 67.8 per cent patients were satisfied with doctor's attitude on the first visit but on the first visit but only 26.8 per cent remained satisfied on revisits. 80.6 per cent patients considered revisits justified and 62.4 per cent pointed out various administrative deficiencies.

6. 7.7 per cent patients had lost their job and nearly 60.0 per cent had loss of income due to illness, more so in lower social classes. Family social problems other than economic were more in higher social classes.

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SOME OBSERVATIONS ON DIPHTHERIA IN DELHI

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and
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The hospital records and mortality data of Delhi in recent years indicated that Diphtheria was not only endemic in the city but also exhibited a rising trend during the last decade. The epidemiological section of the Directorate General of Health Services therefore considered it expedient to make an epidemiological study of the disease in the city with the cooperation of the staff of the Infectious Diseases and Safdarjang Hospitals to find out the extent of the problem and how the Corporation and the allied agencies could be given the necessary assistance in handling the problem.

Method of study

The information of diphtheria cases and deaths was obtained from the different city hospitals in respect of age, sex, place of occurrence, dates of onset, admission, discharge or death and name of the hospital. These data were collected for nine consecutive years between 1954 and 1962 and were analysed for morbidity and mortality rates, case fatality rates by age and sex, annual variation, relative distribution in different areas or zones, seasonal distribution and level of endemicity.

Findings

Morbidity and mortality : The cumulative numbers of diphtheria cases admitted between 1954 and 1962 to the different city hospitals were as follows : Infectious diseases (I.D.) Hospital—12,218, Safdarjang Hospital —130 Police Hospital—34 and Lady Hardinge Medical College Hospital—11, totalling 12,573 cases. The total number of deaths due to this disease was 846 of which as many as 843 occurred in the I. D. and Safdarjang Hospitals. Excluding the cases admitted from areas outside Delhi region, the total number of cases was 11,635 with 739 deaths. The year to year morbidity and the crude and specific death rates due to diphtheria in Delhi during the nine years under review are given in Table I.

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Crude and specific deaths and case fatality rates of diphtheria cases admitted to I. D. and Safdarjang hospitals during 1954-62.

Year	Estimated* population in lakhs	No. of cases	No. of deaths	Case futality rates	Morbidity rates per 100,000	Specific death rate per 100,000
1954	20.10	675	62	9.2	33.6	3.1
1955	20.96	1017	74	7.3	48.5	3.5
1956	21.85	1247	101	8.1	56.9	4.6
1957	22.78	1329	94	7.1	58.3	4.1
1958	23.75	1275	87	6.8	53.7	3.7
1959	24.76	1591	79	5.0	63.4	3.2
1960	25.81	1553	69	4.4	60.2	2.7
1961	26.91	1618	96	5.9	60.1	3.8
1962	28.05	1335	77	5.7	47.6	2.7
Cumulative		11635	739	6.3	54.1	3.4

*Estimates were based on G. P. method applied to 1951 and 1961 population figures.

CHART. I

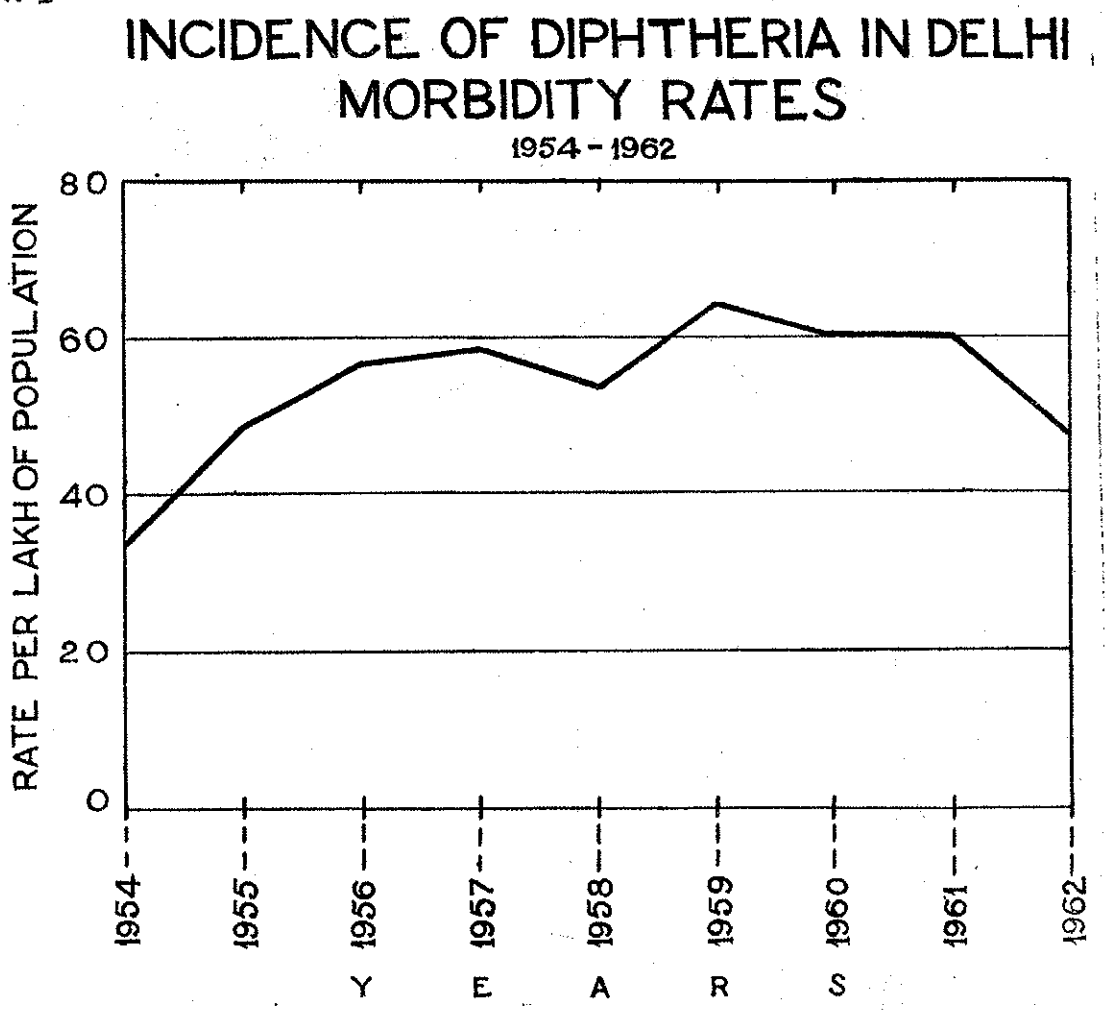
INCIDENCE OF DIPHTHERIA IN DELHI
MORBIDITY RATES
1954 - 1962
RATE PER LAKH OF POPULATION
80
60
40
20
0
1954
1955
1956
1957
1958
1959
1960
1961
1962
YEARS

CHART. II

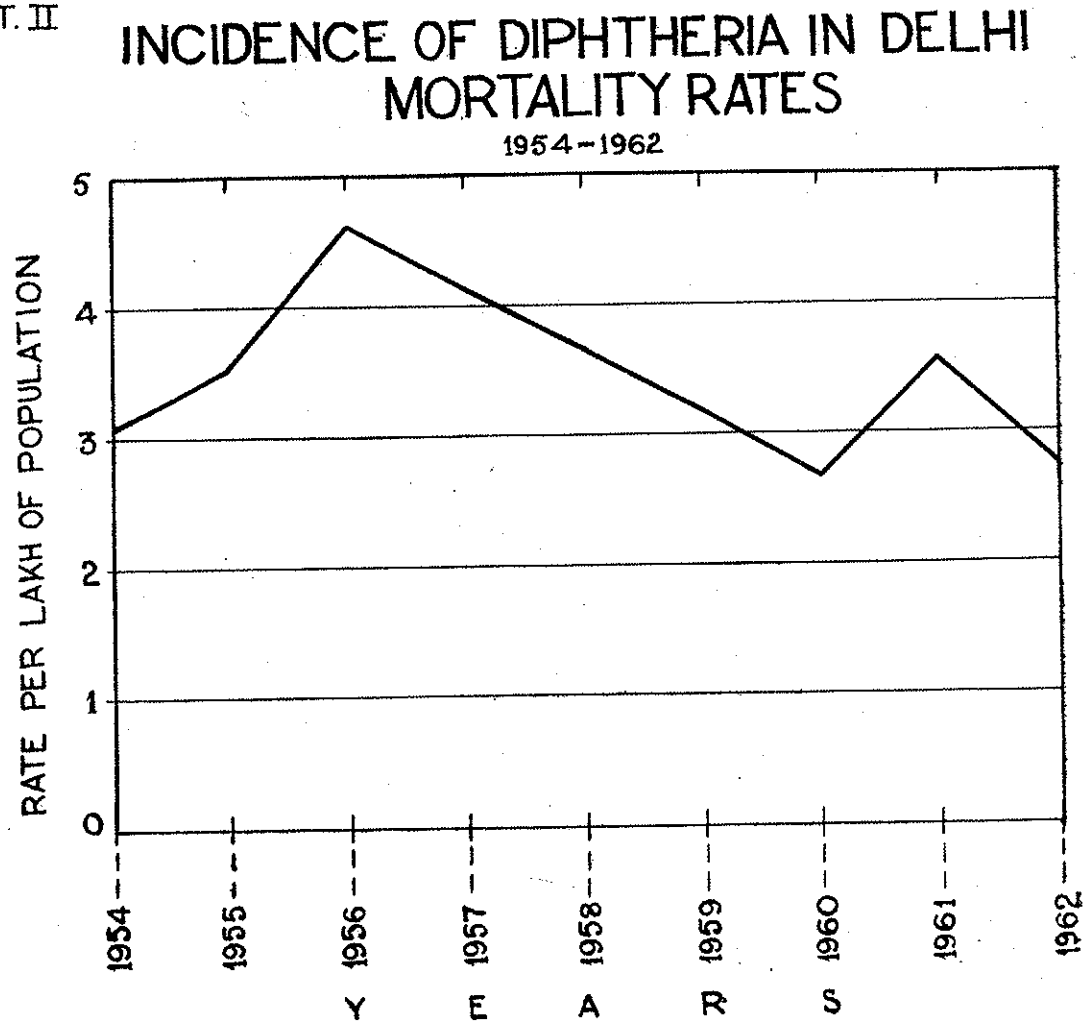
INCIDENCE OF DIPHTHERIA IN DELHI
MORTALITY RATES
1954-1962
RATE PER LAKH OF POPULATION
5
4
3
2
1
0
1954
1955
1956
1957
1958
1959
1960
1961
1962
YEARS

Table I shows that the annual incidence rate of diphtheria maintained a general upward trend between 1954 and 1961 and declined significantly in 1962. It increased from 33.6 per 100,000 in 1954 to a peak of 64.3 per 100,000 in 1959 and then it started declining (Chart I). The mortality rates, on the other hand, after an initial rise from 3.1 per 100,000 in 1954 to a peak of 4.6 per 100,000 in 1954 declined almost progressively to 2.7 per 100,000 in 1962 except during the year 1961 when it registered a higher mortality rate of 3.8 per 100,000 (see chart II). This may be partly due to fall in the fatality rate from 9.2 per cent in 1954 to 5.7 per cent in 1962, the minimum of 4.4 per cent was, however, recorded in the year 1960. The average annual morbidity, mortality and fatality rates of diphtheria between 1954 to 1962 were 54.1 per 100,000 3.4 per 100,000 and 6.3 per cent respecttively.

Seasonal Index : The average monthly admissions of diphtheria cases treated in the I.D. and Safdarjang Hospitals during the period 1954-1962 with their average and median percentage distributions and seasonal indices are given in Table II. For calculating seasonal indices, the percentage distribution of cases by months for each year of the period 1954-62 was worked out and the median value of nine percentage figures for each month was picked out. These monthly median values were adjusted according to the number of days in the month, and the seasonal indices were calculated taking total for monthly indices as 1200. It will be seen from table II that the peak month of incidence was September (197) followed by October (160), August (136) and November (16). The months of lowest incidence were February (60), March (65) and April (70) against the expected value of 100 for each month of there was no seasonal variation.

Table-II

Average monthly admissions and their proportion to yearly cases, average and median percentages and seasonal incidence of diphtheria cases in the I.D. and Safdarjang Hospitals during 1954-1962.

Months	Average monthly admissions	Average percentage distribution	Median percentage	Seasonal indices
January	93	6.7	6.6	79.0
February	63	4.5	4.7	69.9
March	77	5.5	5.5	64.8
April	84	6.0	5.7	70.2
May	100	7.2	6.8	81.5
June	76	5.4	5.8	71.9
July	81	5.8	6.1	72.8
August	157	11.3	11.4	136.0
September	223	16.1	16.0	196.7
October	198	14.2	14.0	166.3
November	142	10.2	9.5	116.3
December	98	7.1	7.1	84.6
Total:	1392	100.0	99.2	12.00

Age distribution of cases (1954-1962) : The distribution of diphtheria cases and deaths in I.D. Hospital by age groups during the nine year period between 1954 and 1962 is given in Table III. It will be noted that the maximum number of cases was in the group 1-4 years followed by that among the infants. It decreased, as expected, after 5 years of age upto 19 years, and then it appears to have increased slightly during next ten years followed by a rapid fall in the higher age groups. It is interesting to note that contrary to the usual experience an average of 108 cases per year was recorded in the age group above 30 years.

Table III

Age distribution of cases and deaths according to admissions in I.D. Hospital. between 1954-*and* 1962

Age groups (year)	Number of cases	Number of deaths	Percent- of total cases	Case fatality rates
Less than 1	1684	296	13.8	17.6
— 4	4001	426	32.8	10.6
5— 9	2216	54	18.2	2.4
10—14	1064	5	8.7	0.5
15—19	714	—	5.8	0.0
20—29	1557	5	12.7	0.32
30 yrs. +	971	1	8.0	0.1
Total	12207	787	100.0	614

The case fatality rate was highest 17.6 per cent among the infants and then decreased progressively as age increased. It was 10.6 per cent in the preschool and 2.4 per cent in the age group 5-9 years 2.4 per cent and 0.5 per cent in 10-14 years, thereafter it declined to a negligible amount. The average fatality rate of cases treated in the I.D. Hospital was 6.4 per cent.

Zonal distribution of diphtheria in Delhi (1950-1962): The distribution of deaths and endemicity conditions by zones for the years 1959 to 1962 in the I.D. Hospital is given in table IV.

(Table IV) Zone II, i.e. the city Sadar Paharganj indicates highest endemicity conditions followed by Zones III, IV, I, X (Rural Delhi) and VII in that order. Thus the three Zones II, III and IV covering the highly congested parts of the city are highly endemic followed by Shahadra and West Delhi areas. However, the inference regarding endemicity conditions cannot be adequately drawn from the data of only 4 years. It may further be mentioned that in this report no attempt was made to study detailed epidemiological characteristics and to offer explanation for the differences seen in different areas and age groups.

Table IV

Distribution of mortality rates due to diphtheria and relative endemicity conditions by ones in Delhi 159-62 *(date used from I.D. GHospitals only)*

Zones		Population in 1,000	Death rate per 100,000	Percentage of affected months
I.	Delhi Shahadra ..	150.7	2.82	33.3
II.	City Sadar Paharganj ..	715.6	3.53	81.3
III.	Karolbagh Patelnagar ..	323.3	3.09	54.2
VI.	Sabzimandi Civil lines ..	362.2	4.28	52.1
V.	Transferred Area ..	222.8	0.56	10.4
VI.	South Delhi	115.6	1.08	8.3
VII.	West Delhi	171.6	2.33	292.
VIII.	N. D. M. C.	261.5	0.86	18.8
XI.	Delhi Cantt.	36.1	0.0	—
X.	Rural Delhi	299.2	1.76	31.3
	Total Delhi	2658.6	2.60	

Table IV shows that the average annual mortality rate was highest 4.28 per 100,000 in Zone IV—Subzimandi Civil lines followed by 3.53 in Zone II—City Sadar—Paharganj area and 3.09 per 100,000 in Zone III—Karolbagh—Patelnagar area. The fourth fifth and sixth places were taken by Zones I, VII and VI i.e. Delhi—Shahadara, West Delhi and South Delhi respectively. The incidence of death was nil in Delhi Cantonment and negligible in the Transferred Area (Zone V). The mortality rate in Rural Delhi was intermediate between the endemic areas of congested city Zones I to IV and that of the Transferred Area.

Level of endemicity: According to the distribution of percentage of affected months

Summary

The records of diphtheria in patients treated during the years 1954 to 1962 in the I.D. and Safdarjang Hospitals of Delhi where most of the cases in the city are admitted were analysed to find out the extent and characteristics of the problem with a view to help the Municipal Corporation and allied agencies in handling the problem. The summary of the findings is given below:

1. The annual morbidity rate (per 100,000 population) showed an upward trend during the years 1954-1959. A decline was noted in 1962. The mortality and fatality rates declined earlier particularly since 1959. The fatality rates declined from 9.6 per cent in 1954 to 5.9 per cent in 1962.

2. Seasonally, the maximum incidence was between August and November with peak in September, and the lowest incidence was between February and April.

3. The maximum incidence was in the age group 1-4 years followed by among infants. It decreased rapidly till 19 years with a slight increase in the age group 20-29 years. A fair number of cases was recorded even among persons above 30 years.

4. A significant variation in incidence was observed between one area and another. The congested city Zones II, III and IV representing city Sadar Paharjang, Karolbagh—Patelnagar and Subzimandi Civil Lines, showed higher endemicity than other areas.

Acknowledgement

Our thanks are due to Dr. W. Mathur the then Municipal Health Officer of Delhi and to Dr. G. M. Dewan, Medical Superintendent of Infectious Diseases Hispital for the cooperation afforded in carrying out this study. The useful assistance rendered by Sarbasri S. P. Sharma and S. R. Sharma in the compilation of the data is also appreciated.

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NORMAL AGGLUTININS FOR S. TYPHI AND S. PARATYPHI IN ADULT HOSPITAL POPULATION IN MIRAJ IN MAHARASTRA STATE

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Introduction

The level of antibody titre against salmonella group of organisms in healthy non-convalescent non inoculated individuals in a community is an index of endemicity for salmonella infection and reflects on the ease with which transmission of infection occurs in the community. Transmission of Salmonella typhi and paratyphi A and B infections to a large extent depends on the general sanitation with particular reference to water supply and disposal of human wastes.

Miraj town (1961 census population 53,345) situated in Southern Maharashtra is at present having a primitive sanitary set up. In the whole town the bucket privies drain into open gutters which are crossed over by water pipes, which at many places are leaking. The water supply is intermittant and inadequate. The local authority has of late launched upon a programme of general environmental sanitation including repair of water pipes and laying of underground drainage system, and supplimenting the water supply from an additional source.

To evaluate the impact of the environmental sanitation programme on the ease of transmission of Salmonella typhi A and B infection, it was decided to study the antibody titre against above group of organisms in a random sample of population. In the absence of any data on incidence of cases of typhoid and paratyphoid fevers in the community the information collected would form a baseline data for comparison after few decades.

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With the establishment of a medical college at Miraj, for last four years there is an increasing demand for diagnostic laboratory services. It is an observation of one of the authors (BNJ) that for various reasons including the cost of laboratory services, the practitioners in the town send only single samples of sera for Widal testing. It was expected that the results of this study would help them to arrieve at a reasonably good diagnosis of enteric fever.

Material and Method

During the year 1964, 450 serum samples were tested. On account of the non-availability of sera from a random sample of population, the study was limited to only adult hospital population. Out of 450 serum samples tested, 178 were V.D.R.L. negative sera received for serological tests for syphilis, 161 were from prospective blood donors and 111 were received from general O.P.D. from persons who had come for various chronic ailments. A careful history was taken to exclude individuals giving a history of continuous fever during the preceeding one year or of having taken T.A.B. vaccine any time previously.

Table I

Percentage of the Sera Agglutinating at each titre

Suspension.	1/20	1/40	1/80	1/160	Total
TO	21.0	18.0	7.0	1.0	47.0
TH	9.0	4.5	1.0	0.2	14.7
AO	3.0	1.5	0.5	—	5.0
AH	3.2	1.9	1.0	–	6.1
BO	17.0	8.0	3.1	1.2	29.3
BH	8.5	3.8	1.1	0.6	14.0

Table II

A comparative study of the frequency (in percentage) of agglutinins recorded by different workers at different places

Agglutinins	Pasricha at al 1 Calcutta	Pasricha at al 1 Darjeeling	Singh B 2 (Jamshed-pur)	Singh & Nair 2 (Pondichery)	Singh B 4 (Delhi)	Das 5 (Singur)	Present workers (Miraj)
No. of Sera tested	280	85	*	1000	500	130	450
Lowest dilution	1:25	1:25	1:25	1:25	1:25	1:10	1:20
TO	20	—	40.6 (916)	41.4	12.5	37.7	47.0
TH	22.1	54	10.3 (972)	33.0	21.0	37.7	14.7
AO	—	—	0.4 (538)	—	—	—	5.0
AH	9.28	14	3.4 (886)	17.2	4.5	13.8	6.1
BO	6.4	—	6.2 (530)	—	—	—	29.3
BH	15.7	40	5.1 (815)	15.8	—	11.5	14.0

*Number of sera tested are shown in the bracket.

The test was put up in a final dilution of 1/20; 1/40; 1/80 and 1/160 in round bottom test tubes. The suspensions of S. typhi—O & H; S. paratyphi A—O & H; and S. paratyphi B—O & H were obtained from the Central Research Institute, Kasauli. Incubation was done in a waterbath at 52°C. for two hours and readings were taken after overnight incubation at room temperature.

Results

Out of the 450 samples tested, 287 (i.e., 63.8%) showed agglutinins against one or more of the Salmonella antigens in some or other dilutions.

Table I shows persentage of the sera agglutinating at each titre.

Table II shows a comparative study of the frequency (in percentage) of agglutinins recorded by different workers at different places in India.

Discussion

From the present work it could be assumed that 63.8% of the adult population studied, had contact with one or more of the Salmonella serotypes prior to examination and in sufficient dose so as to produce detectable antibodies, at the lowest dilution used for the test.

An analysis of table I shows that agglutinins against S. typhi are more common than those against S. paratyphi A and B. This observation is in conformity with the results of comparable studies in order parts of India (Table II). Mody and Vaidya[6], commenting on similar findings in Bombay remark that a higher frequency of agglutinins for S. typhi than those for S. paratyphi A and B suggests a more "evanescent" nature of agglutinins for S. paratyphi A and B. Since in the bactriologically diagnosed cases of enteric fever in India, there is a preponderence of infection with S. typhi than with S. paratyphi A and B, (Singh[7],-Goyal[8], Karunakaran[9], Minchin[10], Napier[13], sant[12], Soman[13], [15] Sulakhe[14],) there is reason to believe that apart from the possible "evanescent" nature of agglutinins for S. paratyphi A and B as suggested by Mody and Vaidya[6], ecological and environmental factors concerned with Salmonella transmission account for the relative preponderance of agglutinins against S. typhi.

We have been struck by the high incidence of agglutinins against the antigens of S. paratyphi B. In our study the incidence of agglutinins against O antigen of S. paratyphi B is higher; and that against H antigen compares favourably with the reports of other Indian workers (Table II). Considering the rarity of S. paratyphi B infections in this

country, such a high frequency of S. paratyphi B agglutinins may be due to the sharing of common antigen by many of the Salmonella serotypes[16], which are widely distributed in nature and have an entry into the human body because of the impure water supply and insanitary conditions prevailing in this area. In a survey like this, while interpreting the incidence of agglutinins, particularly against H antigen of organisms like S. paratyphi B which are rarely encountered in clinical infections, immunity status of the surveyed population as judged by T. A. B. inoculations in the past need to be considered, as it is reported by Kaarsalo[17] that H agglutinins have been found in high titre even after 11 to 15 years of the date of inoculation. In the study under report, as only individuals with no history of T.A.B. inoculations in the past are included the above reason would not account for the high incidence of agglutinins against S. paratyphi B.

The frequency of agglutinins in this study is generally higher than that reported by other Indian workers (Table II). All these workers were primarily interested in finding a minimum diagnostic titre in a single Widal test during active infection and hence have made no reference to the prevailing environmental conditions. Whether the variations in the frequency of agglutinins at different places reflect on the environmental situations, suitable or enimical to Salmonella transmission, or have come up because of different techniques followed in setting up the test or different antigens used is difficult to comment. In support of the former hypothesis is the observation that the work conducted in Delhi[4] and Calcutta[1], the two premier cities in India having long standing underground drainage system and where the the general sanitation is expected to be of a higher order, shows a lesser frequency of agglutinins than that at other places like Miraj, Pondichery[3] and Jamshedpur[2]. In support of the latter hypothesis is the work conducted by Bhatnagar, Freeman, and Dhilon[18], and Gupta and Gupta[19].

The relative frequencies of agglutinins against TH to TO antigen reported by various workers in India show wide variations. Singh[4] commenting on the reports from India and those of Giglioli[20] in British Guiana, Gardner and Stubington[21] and Smith, McVie and Newbold[22] in U. K. remarks that notwithstanding the fact that variations in the reports on the same specimens investigated in different laboratories are too well known, a higher frequency of H than of O agglutinins seems to exist in communities with poor standards of public health. With our limited knowledge regarding the differential immunological factors which determine the genesis of TH and TO agglutinins, it is difficult to appreciate the above stated relationship of relative frequency of the two agglutinins to general standards of public health. If with a given antigenic stimulus TH and TO agglutinins appear with equal frequency it is logical to expect that in areas of poor standards of public health with repeated encounters with salmonella serotypes, TH and TO antibodies will occur with equal frequency, whereas in areas with good standards of public health and infrequent encounters with salmonella serotypes there will be a preponderance of TH agglutinins as TO agglutinins are know to be short-lived. A prospective study like this conducted in the same laboratory and under different environmental conditions may throw some light on the ill understood problem of relationship of the relative frequency of TH and TO antigen to general standards of public health.

Normal agglutinins against salmonella serotypes in a population provide a guide line for interpretation of a single Widal test particularly in late stage of active infection. Wilson and Miles[23] conclude that in a patient without history of inoculation with T.A.B. vaccine or of previous enteric infection, living in a country in which the disease is at a low endemic level, a titre of 1/50 for H or of 1/100 for O agglutinins in the first 10 days of illness offers strong presumptive evidence of infection. Mody and Vaidya[6] interpreting their work on selected Hospital population in Bombay conclude that a titre of 1/50 for H or O agglutinins may be reckoned as the minimum diagnostic level, lest active cases of typhoid are missed. Singh[4] interpreting his work at Delhi, reports that an end titre of 1/250 for H and of 1/125 for O agglutinins could be considered as minimum diagnostic titre in a single Widal test. From the present study it can inferred that allowing for an error of 1%, an end titre of 1/80, for H agglutinins and of 1/160 for O agglutinins could form a presumptive evidence of enteric infection in hospital population at Miraj. In attaching diagnostic significance to an end titre of 1/80 for H

agglutinins alone, the possibilities of an anamnestic reaction as pointed out by Singh,[2], [24] and Singh and Saxena [25] should be kept in mind.

Summary

1. Frequency distribution of normal agglutinins against S. typhi and S. paratyphi A and B in 450 non-convalescent, non-inoculated adults selected form hospital population at Miraj is presented.

2. Agglutinins against S. typhi are found to be more frequent than those against S. paratyphi A and B. The reasons for this finding are discussed.

3. The possible causes for the observed high incidence of agglutinins against antigen of S. paratyphi B are discussed.

4. The results of the present study are are compared with those of comparable studies in other parts of India and the possible causes for the variations in the result are discussed.

5. The relationship of the relative frequency of H and O agglutinins to general standards of public health is discussed and the importance of a prospective study to evaluate further the above relationship is stressed.

6. An end titre of 1/80 for H, 1/160 for O agglutinins is recommended as the minimum diagnostic titre for interpretation of a single Widal test at Miraj.

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HOUSE SURGEONS' AWARENESS AND PERCEPTION OF FAMILY PLANNING IN HOSPITAL CARE—PART I

By
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Introduction

The institution of house surgeon is too familiar a term to the student of medicine to need any detailed description of the job assignment. What is likely to be missed sometimes is the important contribution of house-surgeonship towards the preparation of a doctor and also in provision of services to the patients in a hospital.[1] It is during the housemanship that a student of medical science is able to acquire competence and confidence to practice the art of medicine.[2] But one cannot divorce the art of practice from scientific medicine any more than one can separate the soul from the body. It is, therefore, important that physician of tomorrow be given an opportunity to understand the human aspects of the problems of his patients. Unless health is viewed in its widest sense, as applicable to individual patient and his family, the attention given to a patient in the hospital may not be rewarding or lasting.

Viewed in this context understanding the social factors influencing health gain added significance in the preparation of a basic doctor. In practice this will result in exposing the house-surgeon to a variety of health services which may not merit academic importance for undergraduate medical students. One such service concerns family planning.

Indias' growing population during recent years has attracted attention and led to adoption of urgent measures to help in control of population. In other words family planning advice, according to the current pattern of health care in India, is an essential part of the health services rendered to every married couple.[4] The subject however, merits greater importance if one of the couple is not keeping well, because in that case the clinical requirements are superimposed on the social needs for family limitation.

This concept requires a house surgeon to be familiar with problems such as improvident maternity. He will be required to take necessary measures to familiarize the ignorant though needy patients with the concent of family planning and prescribe postponement or cessation of pregnancy as a part of total health care. The task seems easy on its face value as the family planning programme has been sponsored and is being actively supervised by health personnel. But in practice it is extremely difficult as the institutions training the health personnel have so far failed to get interested in providing effective family planning services through their respective hospital. Since a house surgeon is the main link for communication between the senior professional staff and the patients, the asesssment of his role in providing family planning services will give a clue to the importance being given to the subject in any institution.

The present study on the role of house surgeons has been designed to obtain base line data with respect to the contributions made by them towards family planning in a medical college hospital.

The specific objective of the study are :—

1. To study the role of house surgeon in relation to family planning in a hospital.

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2. To identify their knowledge and concept about family planing.
3. To find out their awareness about the family planning clinic functioning in the hospital, and the extent to which they were utilizing its services for the patients.
4. To understand the importance they give to family planning services.

Methodology

A complete list of house surgeons working in Lady Hardinge Medical College Hospital and Kalawati Saran Hospital was procured through the Medical Superintendent. Permission from the various heads of the departments was taken to interview the house surgeons working in their respective units. A combination of a structured questionnaire and interviewing with the help of a guideline was used to collect the information. The questionnarie was pretested on the out going house surgeons in the same hospital who were not included in the sample for study.

The sample covers 49 women house surgeons working in the hospitals mentioned above. They were first given the questionnarie to fill and then an appointment was sought for interviewing. Each house-surgeon was contacted individually. Eight of these did not either complete the questionnarie or give the interview. Only 41 house-surgeons completed the questionnarie and gave the interview, thus constituting the sample under study.

The questionnaire was designed to find (1) the house surgeons concept and understanding of family planning, (2) whether they think it desirable to limit the family size, and (3) whether they are aware of any ill effects due to improvident maternity.

Limitations

1. The house surgeons have a busy schedule and so were not easily available.
2. The interview was rather long and reported by them to be tedious. It lasted for 30-45 minutes with each respondent.

IDENTIFICATION DATA

Age-groups

65.9 per cent of the house-surgeons were between the ages of 22-24 years 24.4 per cent were 25 years old. 7.3 per cent were 26 years and 2.4 per cent did not mention the age.

Only 7.3 per cent of the respondents were married while 92.7 per cent were un-married.

Year of graduation

..63.4 per cent had graduated in 1962, and 46.6 per cent in 1961 i.e. two years before the study was conducted.

Number of house jobs

68.3 per cent house-surgeons in the sample were doing their first house job. 12.2 per cent their second job. For the rest of the 19.5 per cent it was their third posting. (The term of posting is for six months in a speciality).

Medical College from where graduated

68.3 per cent had qualified from Lady Hardinge Medical College, 19.4 per cent from Medical College, Nagpur and 4.9 per cent from a Medical College at Ludhiana. Out of the rest 2.4 per cent had qualified from colleges at Calcutta, Kanpur and Jaipur.

Department of present posting

Departmentwise distribution of the respondents

Name of the department	Respondents attached to the department
Obstetric and Gynaecology	29.3
Medical	24.4
Pediatrics	17.0
Surgical	12.2
Social and Preventive Medicine	4.9
Eye	4.9
E. N. T.	4.9
Anaesthesia	2.4
	100.0

FINDINGS

The information collected is discussed in the following pages :—

Q. No. 1. What in your opinion is the National Family Planning Programme trying to achieve ?

Aims given by the respondents	Per cent mentioning
Population control and raising the standard of living	39.0
Limitation and spacing or birth control	34.1
Provide children to childless couples	4.9
To persuade people with multiparity for sterilization	4.9
Wrong answers	7.4
No answer	9.7
	100.0

Though family planning has been included in the medical curriculum since 1959 and demographic aspects appear to be taught to the students, only 39.0 per cent respondents have a correct understanding of the goal of National Family Planning Programme. The other 61.3 per cent have tried to guess and give some answer, where as 9.7 gave no answer.

Q. No. 2: What do you understand by Family Planning?

Responses	Per cent of respondents mentioing
Spacing	51.2
Limitation of children	41.4
*Planning according to socio-economic needs	34.1
Maintaining health of the mother and children	12.2
*Happiness of family	9.7
*Produce ideal family and healthy new generation	2.4
Planned family	4.9
Birth control	4.9
sterilize those with many children	4.9
Diagnosis and treatment for sterile couples	17.1
No answer	4.9

(Multiple responses)

51.2 per cent stated that family planning means spacing. For some of the responses the term spacing has been used for expressions such as to have a limited number of children with good difference in age or having a decent interval between the children. 34.1 per cent mentioned the socio-economic reasons for family planning. 12.2 per cent related it to health needs of mother and child. Another 12.2 per cent indicated the psychological factors related to the happiness of the family. Thus 46.2 per cent of the total respondents (*marked) conceived of the necessity of family planning on socio-economic and psychological grounds rather than the health needs.

Q. No. 3: Is it desirable to have a limited family, why so?

Responses	Per cent of Respondents mentioning
*Better standard of living	76.3
*Better looking after the children	65.7
*Education of children	52.6
Health care of children and mother	50.0
*For happy family life and easier to manage small family	23.7
*For countrys sake and to make good citizens	15.2
*Only poor need family planning	2.6
Do not believe in large family	2.6

(Multiple responses)

In answer to the question as to whether it is desirable to limit the family. 93.0 per cent of the respondents said 'Yes'. 7.0 per cent said it depends on desirability and circumstances.

On being further questioned as to why family limitation is desirable, there were multiple responses. These as listed above show that socio-economic factors are considered as the main indication (*marked) for family limitation by maximum number of respondents. Half the respondents have also mentioned the need on grounds of health of mother and children.

Q. No. 4: What are the medical consequences of repeated births or a big family?

Responses	Per cent of respondents mentioning
Health of the mother would be affected	92.7
Deficiency diseases occur, like anaemia, ostemalacia	58.5
Complications from repeated pregnancies	36.6
Affects health of the children	41.4
Mental trauma to children and strain and stress for parents	21.9
Deteroration of economic condition	14.6
Spread of diseases	7.3
Increases infant mortality and morbidity	2.4
Mental defeciency	4.9

(Multiple resopnses)

When asked to give medical consequences of repeated births the responses covered a wide range of health conditions. 92.7 per cent affecting only mother, 41.4 per cent affecting only children and 21.9 per cent affecting mothers and children.

The responses like spread of disease and mental deficiency do not give any indication of the picture that the respondent had in mind regarding its relationship to repeated births.

Q. No. 5: Kindly check (√) the five conditions where you would like to advise family planning?

Clinical condition	Per cent of respondents mentioning
Organic heart disease	92.7
Poor socio-tconomic condition	87.8
Pulmanary T. B.	80.2
Multiparity	65.5
Veneral disease	46.3
Mental disorder	41.3
Eugenic conditions	9.8
Chronic Nephritis	
Diabetes	
Chronic bronchitis	

(Multiple responses)

Asked to check, five out of a list of ten conditions where they would consider advising family planning, the most commonly mentioned clinical conditions are organic heart diseases 92.7 per cent and pulminary T. B. 80.2 per cent. Though, 65.5 per cent mentioned multiparity yet poor socio-economic conditions is rated second highest in the list with 87.8 per cent mentioning it. This is also in conformity with the mental picture of family planning the housesurgeons have as described earlier. One would expect family planning advice to be rendered also in contions like chronic nephritis and diabetis but no respondent has ticked these conditions.

The following table gives the percentage of respondents and number of conditions tick marked by them as mentioned against each.

Number of conditions mentioned by respondents	Per cent of respondents mentioning
5	41.5
4	48.3
3	7.3
2	4.9

It will be seen that only 41.5 per cent house surgeons checked five conditions out of the ten given to them in the questionnaire. Majority of them (48.3 per cent) checked only 4 conditions.

Discussion

The level of effeciency for any performance depends on—

1. The understanding of the work to be and its importance
2. Ability to apply it in practice.
3. Degree of job satisfaction achieved and
4. Recognition received through its performance.

The findings as covered in the previous pages would therefore be discussed under these headings.

(*To be discussed in Part II)

1. Understanding and Importance

A review of the findings shows that 56 per cent[1] of the respondents interpret family

1. Table No. 2, Items No. 1, 2.

planning to mean either only spacing or only limiting the family size. Only 36.6 per cent had more or less, a complete understanding of the concept and mentioned spacing, limitation of number of children as well as population control.

Seventeen per cent[2] of the responses were vague and completely unrelated to the situations in which the respondents are working and so can provide family planning advice and services.

The expression such as 'happiness of family' or 'produce ideal family' and 'healthy new generation' may serve as good ear catching slogans but are not usually considered important enough when related to the specific immediate need of a patient admitted in hospital. 34.1 per cent[3] of the respondents conceptualized family planning as leaning heavily on socio-economic factors rather than related to health needs.

Both the above mentioned findings i.e. vague picture and emphasis on socio-economic conditions signify that the house surgeons appreciate the need for family planning only theoretically. One would have hypothesised that house surgeons who are interviewed while at work in the hospital would interpret family planning programme in the background of their immediate experience and relate it to the obvious need of the patient in light of the disease condition, rather than rely on what could be termed as text book knowledge. This gap between theoretical understanding and the preliminary steps of relating it to the patients conditions naturally does not provide enough motivation for the house surgeons to realize the importance of providing such services.

It may be mentioned here that these findings are alike for all age groups of House surgeons. There is neither any difference because of different institutions from where the respondents graduated nor is there any difference according to length of time spent in house surgeonship.

2. **Ability to apply in practice**

It is interesting to note that the same question on family planning, when asked from the medical point of view (No. 5) elicited more precise responses. This may be due to the fact that a house surgeon is better prepared to frame a mental picture of needs related to disease conditions of the patients rather than to think of reinforcing the positive side of health care by relating it to social needs of the individual and its effects on the community. The mental picture framed by the house surgeons in relation to family planning, as elicited in this study, is biased considerably in favour of the socio-economic factors. Their inability to integrate family planning in generalized health care of the patient may be due to the fact they cannot understand the influence of socio-economic factors on health.

With respect to the importance of family planning there is a need to dicotomize it in relation to (a) patients need, through hospital care, (b) national problem.

Ideally speaking, and relating it to current thinking on community health, the pattern of health care provided to patients in a hospital needs to take into consideration the major health problems of the community. To do so the health needs of a patient care to be judged in the background of his family and community. This concept to be put into practice requires emphasis on "total patient care" which can be said to cover—

(a) Immediate care given to a patient during hospitalization.

(b) Preparation of the patient while in the hospital, for the post hospitalisation care.

(c) Long term care given after discharge from hospital.

This concept is being put into practice in cases of cardiac disease, tubercular cases and also for ante-natal mothers when they are given advice and care. However, the synthesis of thoughts on these lines appears to be lacking with respect to the family planning advice. This conclusion is further supported by the fact that only 41.5 per cent of house surgeons were able to indicate five out of ten given conditions in which they would associate family planning as a part of total health care. Most of them could think of only 3 or 4 conditions. This may be due to the fact that they did not consider family planning important enough to advise about it as they were unable to appreciate a link between such advice and the clinical conditions mentioned in the questionnaire.

2. Table No. 2, Items No. 5, 6, 7.
3. Table No. 2, Item No. 3.

It goes to show that though theoretically house surgeons have some knowledge of family planning yet in practice they do not appear to consider it important enough as a part of advice in various clinical conditions. It may be due to the fact that since they do not see it being practiced as a part of medical care for the patients, they do not develop a pattern of thinking in which family planning is integrated.

Summary and Conclusions

1. The sample of study covers 41 house surgeons working in a teaching hospital.
2. The house surgeons were vaguely familiar with the broad concept of of family planning and its importance.
3. Socio-economic conditions appear to be the most important factor in their minds for the need to give family planning advise.
4. Though they are aware of family planning services they are unable to relate it as an essential part of total health care of the patient.

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HOUSE-SURGEONS' AWARENESS AND PERCEPTION OF FAMILY PLANNING IN HOSPITAL CARE—PART II

By

Dr. D. Anand* and Dr. K. Kanwar**

In part one of this paper the authors have discussed house-surgeons' awareness of family planning while working in a teaching hospital. The present paper deals with the findings connected with the practice of family planning advice in their day to day work in the wards. Findings as mentioned below are based on interviews with the same sample of house-surgeons that were contacted in part I of this paper. The interviews were conducted by a team consisting of a research medical officer and investigator. A combination of the structured questionnaire and individual interviews with the help of a guideline was used to collect the information. Both the qualitative and quantitative aspects of the role performance were covered.

Findings

The findings have been presented in relation to the questions put to the house-surgeons.

Question No. 1: In terms of the types of patients you work with, how big do you think is the need for family planning advice.

73 per cent of the respondents rated need for family planning advice as high or fairly high among the patients, 20 per cent felt that the need is moderate, while 5 per cent mentioned that there was very little need and 2 per cent did not answer at all.

There was a difference noticed in the house-surgeons' perception of the importance and their desire to provide family planning services. This could be illustrated from the following answer.

Question No. 2: Supposing a patient comes to you for family planning advice would you like to talk to her yourself?

Only 32 per cent respondents answered in affirmative without qualifying the statement. Another group of 27 per cent respondents also felt the same way. Out of these 7 (63.7 per cent) house-surgeons desired to refer the patient to the clinic afterwards and 4 (36.3 per cent) thought they could do so only when they have time.

It is important to note that one-fifth of the house-surgeons, 19 per cent though desirous to give advice, were unable to do so. It was primarily due to their inability to feel confident to explain about family planning to the patients. Nearly an equal number 22 per cent expressed their inability to give any advice.

The house-surgeons conceived of family planning advice primarily as a part of referral service rather than an essential part of the total health care of the patients. This is seen from the nature of response to question No. 3.

Question No. 3: 'In case some one approached you for advice on family planning, what will you suggest'?

A total of 61 responses from forty one respondents were received. Referral to the family planning clinic figured the most constituting 44 per cent of the respondents.

Twelve per cent respondents indicated the need to know the family history before giving

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advice and also the need to explain methods and their advantages.

Twenty-two per cent respondents emphasised on sterilisation and a mention was also made about the 'investigations of sterile couple', 'safe period and abstinence' in a total of 7 per cent and 10 per cent respondents respectively. 29 per cent respondents gave advice about family planning and contraceptive methods. Clarification about the method of contraceptives and advantages of family planning to be explained, was given by 24 per cent respondents.

It might be recalled that some of the house-surgeons replying to question number two had mentioned that they would like to advice but cannot explain. A question was therefore, posed to assess the degree of competence felt by the house-surgeons in the discharge of their duties for providing family planning care.

Question No. 4 : Do you feel competent to give such advice ?'

Approximately half of the total house-surgeons, 49 per cent expressed their total inability to advise because they felt they were not competent to do so. 27 per cent felt they were partially competent to give such advice. 22 per cent felt that they were competent enough to give advice. Only 2 per cent house-surgeons felt that 'she could become competent at a later date'.

It was felt that the house-surgeons' competence will be reflected in the confidence that she may feel in giving family planning advice. To what extent this confidence is the same for nearly the same as they have professional care in the speciality in which they were working ? The following question helped to provide an answer.

Question No. 5 : How confident do you feel when talking about various aspects of family planning as compared to the confidence you have when talking about therapeutic care ?'

On comparing their confidence in relation to the therapeutic care only 7 per cent house-surgeons felt 'quite confident'. 10 per cent mentioned that they were 'confident' to provide the services, 83 per cent house-surgeons did not feel confident to provide family planning services.

It might be recalled that house-surgeons had mostly a referral service in their mind when enquired about the type of advice that they would like to render. The extent to which the house-surgeons could give advice would also depend on their own understanding of the location and the type of services provided by the family planning clinic. Questions were therefore, posed to cover information about the family planning clinic in the hospital.

Question No. 6 : Do you know that there is family planning clinic in the hospital ? If so, where exactly is it situated ?

With respect to existence of a family planning clinic in the college practically all the house-surgeons 98 per cent knew about it. However, three house-surgeons were not aware of the exact situation of the family planning clinic. Next question was :

Question No. 7 : What are the main services provided by the family planning clinic ?

Only 32 per cent house-surgeons had definite knowlewge of the broad fields of work performed in the clinic. 27 per cent house-surgeons had some knowledge. 41 per cent did not know about the various types of services at all. The total of twenty-four house-surgeons who mentioned about the services gave 48 responses, as mentioned below :

Knowledge of 24 house-surgeons in relation to family planning clinic services

Clinic services	No/Vague (n 11) No.	%	Definite (n. 13) No.	%
Issue contraceptives	10	90.9	8	61.5
Advice about family planning	6	54.5	4	30.8
Advice regarding contraceptives use	5	45.5	4	30.8
Explain methods of contraception	2	18.2	3	23.1
Refer patients for sterilisation	—	—	2	18.2
Conductng research in oral contraceptives	1	7.7	1	7.7
Advice about safe period	1	7.7	—	—
Follow-up	—	—	1	7.7

If knowledge and understanding predisposes to a motivation for action, the authors were interested in finding out the extent to which house-surgeons had participated in either observations or clinic functions by a visit to the clinic or in a discussion with the clinic staff regarding functions of the clinic. The observations on utilisation of clinic services were obtained as per question below :

Question No. 8 : Did you visit the clinic any time ? If yes, how often and what was the purpose of visit ?

Fifty-four per cent house-surgeons had not visited the clinic during the entire period of their posting. 24 per cent house-surgeons recalled of having visited the clinic at least once and a smaller number 15 per cent house-surgeons at least twice or thrice. Only 2 per cent mentioned to have visited the clinic quite often. 5 per cent visited the clinic occasionally.

A further enquiry regarding the purpose of the visit was given by 46 per cent house-surgeons. Out of these 53 per cent respondents indicated that the visit was made to get acquainted with the working of the clinic and equal number of respondents indicated the purpose of the visit to guide a client (patient or friend) for advice. Eleven per cent house-surgeons visited the clinic for meeting the post operative requirements of patients ad-admitted in the ward. Another 10.1 per cent house-surgeons visited the clinic to collect contraceptives for patients.

Out of these 46 per cent house-surgeons only 2 per cent had talked to the doctor-in-charge of the clinic about the cases that they had referred.

In order to obtain information whether they could refer patients to the family planning clinic, irrespective of their previous acquaintance with the doctor following questions was posed.

Question No. 9 : Did you refer a case to family planning clinic ? If so, how ? If not, the reasons for the same ?

Seventy three per cent house-surgeons mentioned that they did refer patients to family planning clinic while 27 per cent did not. Out of the thirty house-surgeons who followed the procedure 43 per cent mentioned having talked to the patients or writing on the O.P.D. tickets or on discharge slips.

Thirty eight per cent house-surgeons indicated that they had only talked to the patients. 13 per cent house-surgeons mentioned that they only wrote on the discharge slips or OPD ticket but did not talk to the patients. 3.4 per cent had contacted the social worker to do the needful. 6 per cent just referred to the clinic. Out of those who did not refer any cases, 54 per cent did not specify any reasons. 46 per cent gave reasons such as no contact with patients needing family planning advice.

The Lady Hardinge Medical College is a women's hospital and approximately 75 per cent of patients are in the fertile eligible age-group. A question was posed to find out the frequency of referral of the patients for family planning advice.

Question No. 9 : How many cases have you come across in the last 15 days whom you desired to refer to family planning clinic from indoor and outdoor ?

66 per cent house-surgeons while working in the indoor, or 49 per cent posted in the outdoor did not mention coming across patients whom they would liked to refer to family planning clinic. 15 per cent and 24 per cent house-surgeons both indoor and outdoor said that 1-5 cases per day is approximately the most frequest number that they would have referred to family planning clinic. 7 per cent house-surgeons while posted both in (indoor and outdoor)* were more optimistic and felt that 20-25 cases had been referred.

Five per cent indoor and 12 per cent outdoor house-surgeons referred 6-10 patients to the clinic. 5 per cent indoor and 7 per cent outdoor house-surgeons referred 11-15 patients. Only 2 per cent house-surgeons posted in the indoor referred 16-20 patients.

Against this background, the house-surgeons were asked to indicate the approximate number of cases that they may have actually referred for family planning advice.

Question No. 10 : How many cases did you actually refer ?

39 per cent house-surgeons had not referred any case at all, 13 per cent did not reply to the question. This gives a total of twenty four house-surgeons out of forty one who had not referred any case during their tenure of housemanship.

Only 41 per cent house-surgeons remembered to have referred cased during their total period of posting as per details below :—

Frequency distribution of house-surgeons clinic in the tenure period of six months.

No. of cases referred	House-surgeons No.	Percentage
1-5	11	64.6
6-10	2	11.7
11-15	1	6.0
16-20	2	11.7
More than 20	1	6.0
Total :	17	100.0

Discussion

The first part of this paper was devoted to a discussion of house-surgeons' understand-of family planning. It showed that house-surgeons were vaguely familiar with the broad concept of family planning, and mostly interpreted its need in relation to socio-economic conditions of the patient.

The findings as reported in the previous pages indicate that majority of the house-surgeons rated the need for family planning as high amongst patients admitted in the hospital. But in actual practice a fairly large percentage of house-surgeons interviewed, did not desire to advise on family planning. Eeven if they did, they desired to do so with the least amount of professional involvement. For example, the majority of the responses showed that they will like to refer the patients to family planning clinic (Q. 3). This by itself cannot be considered adequate as most of the house-surgeons failed to interpret need for family planning as an integral part of the total health needs of the patients, under their care (Q. 10).

It is of significance that family planning clinic had started operating in this hospital about three years ago. But judged from the replies received from house-surgeons they did not appear to have a clear image of the pattern of services provided by the clinic (Q. 7). This alongwith the wide disparity between felt need for providing family planning services and actual practice, (Q. 1, 2 and 3) makes one feel that work in the family planning clinic had not as yet become an important part of the hospital and its functions. Normally in a working situation like the one under investigation, a house-surgeon may be expected to be better prepared to identify family planning needs of patient and undertake more positive measures rather than a mere referral to family planning clinic.

Job satisfaction

Having identified the picture showing house-surgeons' involvement in providing family planning services, one may try to find the reasons for the existing gap in concept and practice. One of the likely reasons for this gap may be due to the fact that house-surgeons as service givers lack motivating force to apprecite family planning services as a part of the total health care given to patients in the hospitals. They need to be doubly motivated to bridge the gap as indicated above. In the first instance they must accept to provide family planning advice which is comparatively a new service to eligible patients in the hospital. Secondly, they must bring about a change in their pattern of work so that family planning advice does not require an extra effort but becomes a part of the routine practice that they follow in the hospital. What pressures or incentives can help to bring about a change in existing practices followed by the house-surgeons ? It is apparent that they unlike medical students are not motivated to learn new practices, because of the need for passing an examination.

In the present study we find that the house-surgeons had a high awareness of the importance of family planning but their interest was not sustained as 50 per cent (24) out of the forty one house-surgeons desired to advice on family planning. What forces might have acted to result in the existing gap ? The present study gives an evidence related to the lack of competence expressed by nearly half the house-surgeons, 49 per cent in giving advice to the patients under their care.

The lack of competence expressed by the house-surgeons was problem specific as it related to only one, family planning and not to the other activities carried out by them. It will therefore, be logical to conclude that

* House Surgeons under study were posted in both OPD and indoor clinics.

house-surgeons' opportunity to learn and work in the field of family planning were different from similar opportunities available in the speciality to which they were assigned. This obviously had nothing to do with the work in any one speciality as house-surgeons in the group who expressed lack of competence belonged to different specialities.

Recognition received through its performance

Further analysis of the data showed that instead of 24 house-surgeons, only 41 per cent actually advised or referred for family planning. This therefore shows an increase in the number of house-surgeons who probably felt 'Lack of competence' but were hesitant to admit it. Even the number of cases referred by a house-surgeon is very small compared to the patients in the eligible age-group who may have been given this advice. It is possible that the house-surgeons who tried to give some service in the field of family planning were not able to try the new practice to their entire satisfaction, or they were unable to see any immediate result accruing out of their advice. In both the instances, the incentives to give professional advice will go down.

Perhaps, the house-surgeons' adoption of new practice may be explained through an understanding of the socio-psychological factors influencing such practices. According to Lionberger's concept any new practice will have to pass through a mental process of awareness, interest, evaluation and trial before it is finally adopted. It is possible that that a service might have started with a high awareness and therefore with good possibilities for its adoption in practice but was given up because of the adverse influence of other forces. For example, apathy might be one of the cause, if no one questioned the staff for not following a new practice. It may also be due to lack of interest shown by senior doctors thereby allowing the interest of the junior staff to taper off from the newly established practice. This fact has been brought out in another Study by Dr. Anand and Dr. Rao where the social worker in family planning, gave up maintenance of records after a good start for the simple reasons that no one appeared to be interested in them or in their maintenance.

The system of referral in order to work effectively needs to be made a part of hospital care. It therefore, requires attention to documentation and verbal discussion by the hospital staff with the patients. In practice it may require initial sensitization by the house-surgeons' clarification of doubts by the social worker's explanation to the husband and recording the need for a follow-up on the discharge slip. The present study shows that the house-surgeons who prescribed family planning advice to the patients did not follow all the steps as indicated above. (Q. No 10). It is therefore, possible that this may have also contributed to a feeling of dissatisfaction as referred earlier (Fig. 1).

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ASSOCIATION NEWS

Madhya Pradesh Branch

A State Branch of the Association has been formed in **Madhya Pradesh** with about 95 members on its roll. The office-bearers of the State Branch for the current year are :

President—Dr. R. Subramanian, Director of Health Services, M.P. Indore.

Vice-President—Dr. N. M. Sawant, Dy. Director of Health Services, M.P. Indore.

Secretary—Dr. M. C. Mittal, Prof. & Head of Deptt. of Prev. & Social Medicine, M.G.N. Medical College, Indore.

Joint Secretary—Dr. V. B. Saxena, Reader in Prev. & Social Medicine, Gandhi Medical College, Bhopal.

Treasurer—Dr. M. P. Dwivedi, Reader in Prev. & Social Medicine, M.G.M. Medical College, Indore.

Poona Branch

A Local Branch affiliated to the Maharashtra State Branch of the Associtoin has been formed at **Poona** with the following office-bearers for the current year :—

President—Dr. J. K. Adranvala

Secretary—Lt. Col. A. K. Ganguly

Treasurer—Dr. G. N. Joshi

West Bengal Branch

The West Bengal State Branch of the Indian Public Health Association organised a symposium on 'Problems of Filariasis in West Bengal' on 7th October 1966 at the School of Tropical Medicine, Calcutta. The proceedings have been published by the West Bengal Government as Transactions of the West Bengal Branch of the I.P.H.A. Vol. 1 No. II.

Office Bearers of the State Branch of Indian Public Health Association, West Bengal.

1967

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8. Dr. A. L. Saha,
9. Dr. G. D. Ray,
10. Mrs. Uma Mitra,

Representatives to the Central Council :—

1. Dr. N. Ganguly,
2. Dr. M. M. Ganguly,

Dr. K. N. Rao, M.D., F.C.C.P., F.I.C.S., F.A.M.S., Hon. F.A.P.H.A., Director General of Health Services, Government of India & Ex-President of the Indian Public Health Association has been elected as the First Chairman of the World Federation of Public Health Associations at its Inaugural Meeting held in Geneva in May 1967.

Annual Report of the West Bengal State Branch of the Indian Public Health Association for the year, 1966.

Mr. President, Ladies and Gentlemen,

At the very outset, we deeply regret the sad demise of Dr. G. Ghosh an associate of our association for a long time.

I as a secretary of this association take this opportunity to welcome you to our annual general meeting and scientific session.

Membership

Now we have got 131 members including 15 as life members (we have excluded those names who have not paid membership fees after 1963). For 1966 we have been able to realise subscription from 71 members and we have also collected some arrear membership fees. This year we have enrolled 27 new members. I hope you all will agree that it is an improvement over last year's membership position. May I appeal to our members to help the association by regular payment of subscription at the begining of the session.

We had five executive meetings to transact day to day busines. Last year during the annual general meeting a symposium on the "Control of Diphtheria, Whooping Cough and Tetanus" was held. It was a very successful one. The greatest achievement of the association is the publication of a "Transactions" for the first time. We also organised a symposium on "The problem of Filariasis in West Bengal" in the School of Tropical Medicine in October, 1966. We are thankful to Dr. J. B. Chatterjee for giving us all help to hold it in the School of Tropical Medicine. With pleasure I also inform you that due to the sincere help of Dr. S. D. Basu, Jt. Director, Health Services, West Bengal, the 2nd issue of our "Transactions" is published free of cost through the Govt. of West Bengal.

Finance

From the accounts showing Receipts and Expenditure (upto 31.12.66) you will see that we are leaving with a closing balance of Rs. 2,196.00. We have also collected by this time arrear advertisement bills of Rs. 150/- and Rs. 96/- as state share of subscription and we expect to realise another advertisement bill of Rs. 127.50. For this annual session we have received advertisements for Rs. 350/- and as passed in the last annual general meeting, we are going to spend Rs. 400/- for this annual general meeting. So, we expect that we shall leave a balance of Rs. 2,519.50 for the next session. We hope you will take it as an improvement in our financial position. But, unless there is regular payment of membership subscription this improvement will not last long. For sundry expenditure little explanation is required. For publication of 1st issue of "Transactions" and its distribution to all members of I.P.H.A., we have spent Rs. 822.75. For holding annual general meeting in the year 1965 Rs. 209.95 and for office expenses Rs. 125/- have been spent respectively. All these expenditures have been approved by the executive committee. Here I like to mention that we are in difficulties not having a permanent address for our association. We request you to help us to find a office for us.

Our Stand

You all know that last year in our report we expressed our regret about West Bengal Government's decision regarding option for practice. On the basis of our last year's decision we approached secretary Dept. of Health and D.H.S. West Bengal regarding improvement of service condition of community health physicians and public health nurses. Secretary, Dept. of health has forwarded our letter to D.H.S. for his recommendation. But, uptil now we have not received any reply from the Director of the Health Services. Our President has requested him again to consider our request.

We must convince the government that to a great extent the health services depend on the services rendered by community health physicians. When we talk about the progress of health services in our country we really mean the self sacrificing services rendered by the community health physicians. So, if the government does not appreciate the services of ours, then younger generation will not accept this speciality as a carrer. So, our stand will be to convince the government to increase our emoluments and service condition.

I thank Dr. (Mrs.) M. Sen, Director of A.I.I.H. & P.H. for allowing us to hold the meeting in this institute. Lastly I thank Sri S. B. Banerjee and Sri N. Talakdar for maintaining and auditing our accounts respectively. I thank you all for your kind presence.

Monimoy Ganguly
Hony. Secretary.

Dept. of Preventive & Social Medicine
Medical College, Calcutta.
Dated, the 17th February, 1967.

Appeal to Members

1. Members are requested to send their subscription due for the year 1967 to the General Secretary of the Association as early as possible.

2. Members are also requested to send notes on their participation in theWorld Health Day Celebrated on 7th April, 1967 for publication in the next issue of the Journal.

3. Members are informed that the Indian Medical Association is publishing a health magazine "Your Health". The magazine is intended to educate the public on Public Health. Articles written in simple language, preferably, with illustrations, are invited by the management. The annual subscription rate for the I.M.A. members is Rs. 6/- only. Further information can be had from the Hony.Editor, Your Health, 53, Creek Row, Calcutta-14.

Maharashtra State Branch

W.H.O. Day theme this year was "Partners in Health" It was observed, as usual on 7th April 1967. The programme was jointly organized by the B. J. Medical College, and Sassoon General Hospital, D.D.M.S., and D.D.P.H., Poona Division, I.M.A. and Poona Municipal Corporation.

A Symposium was organised at I.M.A. Hall between 4 p.m. to 5-45 p.m. Sri Chavan, Divisional Commissioner of Poona was the chief speaker. The other epeakers were Dr. P. D. Bhave, Director of Public Health, who gave the Introduction. Professor G. P. Pradhan put forward the role of teachers and the role of political leaders, in promoting the positive concept of health, this was followed by Shri Khasners, who spoke on what the Public Health Engineer can contribute to health promotion. Mrs. Karadkar, Matron, Sassoon General Hospitals, gave a talk on nursing profession and Mrs. M. Dravid, medical Social Worker, Sassoon General Hospitals spoke on what a social worker can do and what is being done at the hospital. Sri Chavan emphasized the important role of the doctor and pointed out the importance of family planning.

Dr. Bhide, President I.M.A., Poona Branch gave the vote of thanks. The function ended with tea by I.M.A. local branch. The meeting was largely atteded.

An exhibition was arranged by us at this occasion at I.M.A. Hall. It was well appreciated. The exhibits were later moved to O.P.D. Sassoon General Hospitals and was kept there for one week. Shri Pendse—Chounde the artist deserve due credit for the exhibits which was highly instructive.

VARANASI DISTRICT BRANCH
OBITUARY

WE the members of AIPHA convey our condolenses on the sad and untimely demise of Dr. B. D. Badhawa, M.O.H., B.H.U. and an active members of the IPHA. We pray God to bestow courage and strength to the members of bereaved family and peace to the departed soul. May his soul rest in Heaven.

Members of the Indian Public
Health Association, Dist. Branch, Varanasi.

STATEMENT OF OWNERSHIP

Statement about ownership and other particulars about newspaper (Indian Journal of Public Health) to be published in the first issue every year after last day of February.

Form IV

See Rule (2)

1. Place of publication ——— Indian Journal of Public Health

2. Periodicity of its publication ——— Quarterly

3. Printer's Name ——— Dr. A. K. Roy
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5. Editor's Name ——— Dr. Muktha Sen
   Nationality ——— Indian
   Address ——— 110, Chittaranjan Avenue, Calcutta-12

6. Names and addresses of individuals who own the newspaper and partners or shareholders holding more than one per cent of the total capital. — Indian Public Health Association, 110, Chittaranjan Avenue, Calcutta-12

I, Dr. A. K. Roy, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Date 8.5.1967

Signature of Publisher Sd/- A. K. Roy

INDIAN JOURNAL OF
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Vol. XI, No. 2, April 1967

NOTES & NEWS

Promotion of Research in Medical College : A New Scheme

It has been felt that teachers in Medical Colleges are unable to pursue their research activities because of the pressure of their routine and teaching duties. A new scheme launched by the I.C.M.R. aims at enabling such research workers to devote their time entirely to research for a limited period.

This scheme is intended primarily for experienced scientists, who are actively engaged in research in the field of Medicine and allied sciences; have attained some eminence in their field of study and are anxious to devote their entire attention for a limited period so as to be able to pursue the important leads already obtained by them.

According to this scheme, the selected research worker will be treated as having been seconded to the Research Cadre of the I.C.M.R. for the duration of the scheme which will normally be one year but may be extended to two years. The salary and allowances, which the research worker would have drawn in his/her permanent post, will be met by the I.C.M.R. while the parent office would have to safegaurd his/her seniority in service and promotion in the permanent cadre. The Council will make a grant of Rs. 5,000/- per annum towards contigent expenditure and will also provide the research workers with one or two research assistants/fellows.

The selected research worker may elect to work at the institution, where he/she is employed or in other institution of his/her choice. This provision has been made to enable the research worker to migrate to an institution where better facilties are available for work in his/her line. If the research worker has to change his/her venue, the Council will bear the travelling allowance of the worker and the members of his/her family.

The last date of receipt of applications is 30th June, 1967. 8 copies giving details of academic career, research experience along with reprints of publised papers, complete plan of work, including objectives, work already done and detailed work proposed to be carried out, present pay and allowances and the name of the Institution where the work will be carried out may be forwarded to the Director-General, Indian Council of Medical Research, Medical Enclave (Ansari Nagar), New Delhi-16, through proper channel.

Indian Academy of Medical Sciences

It has been felt that although in the various medical institutions of the country a lot of original work is being done, enough facilities are not available to bring this work to the notice of the medical scientists. The Academy has decided to provide a forum where original work of high standard can be presented. It has therefore been decided to allot some time for presentation of such work during the scientific session at the annual meetings of the Academy to be held on 2nd December, 1967. The Academy would like medical scientists to participate in this programme and invite papers from young medical scientists who have done original work in any field of medical sciences. It may be possible to select about 10 papers for presentation by the scientists at the time of the annual meetings. It is proposed that those selected for presentation of papers will be paid their travelling allowance etc. and the question of making awards to best two or three is under consideration. The papers

must be submitted to the Executive Director, Indian Academy of Medical Sciences, C.H. E.B. Building, Kotla Road, Temple Lane, New Delhi-1, by the 15th September, 1967.

Production of X-Ray Tubes

Bharat Electronics Ltd. in Bangalore signed an agreement on 15.3.67 for the production of X-Ray Tubes in India. Their Collaborator for this new venture is Eiemens Aktiengesellchaft of the Federal Republic of Germany. Shri B. V. Baliga, Mahaging Director, BBL, who signed the Agreement on behalf of BEL said, 'Under the terms of Agreement, Siemens will render all technical assistance to Bharat Electronics to set up a modern plant for the production of X-Ray Tubes and tube shields. Indigenous production of X-Ray tubes will be another step forward in the field of Medical Electronics and the Indian Medical Profession will be greatly benefited by this venture'. Dr. Hubert Wagner, signed the agreement on behalf of Siemens Aktiengesellschaft. Production of X-Ray tubes in Bharat Electronics is likely to start within 18 months. With this venture foreign exchange saving of Rs. 45 lakhs per annum is expected to accrue.

Extension of Shelf-Life of Freshly Slaughtered Unforzen Poultry

By

Joginder Singh Ghuman, B.V.Sc. & A.H.
Directed by
Dr. A. R. Winter, U.S.A.I.D. Poultry Science Advisor

Freshly slaughtered, ready-for-the-oven chickens contained about 10^3 to $10^{3.5}$ microchickens contained about 10^3 to $10^{3\cdot5}$ microorganisms per gram including about $10^{1\cdot9}$ yeasts and molds. The number exceeded 10^6 at time of spoilage as measured by "off odor"

Two antibiotics, Chlortetracycline (CTC) and Mycostatin were tested for increasing shelf life of poultry meat held at 35°F., 55°F. and room temperature 82-90°F. when applied in different manners.

Soaking the warm carcas in chilled water containing CTC (10 ppm.) and Mycostatin (10 ppm.) proved most effective.

The shelf life of untreated meat was less than 8½ hours when held at room temperature (82-90°F.) and was extended about 5 hours by the use of CTC (10 ppm.)+Mycostatin (10 ppm.) and 16 hours by evaporative cooling (wrapped in damp cloth) with the antibiotics.

At refrigerator temperature (50°F. in lower compartment), the shelf life of untreated meat was 3 days and for the antibiotic treated it was 6 days.

At 35°F. (meat compartment below the freezing compartment in the refrigerator), the shelf life of the treated meat was extended by 10 days over the untreated held at the same temperature.

Guar gum coating was found to be an effective way to extend the freshness of poultry meat.

Wrapping carcasses in wet muslin cloth (evaporative cooling) during hot summer days with air circulating around them extend their freshness by lowering the temperature and decreasing weight loss.

Centenary of Antiseptic Surgery

Of

Joseph Lister—1827-1912

The centenary of Lister's first use of the antiseptic method for preventing wound infection falls within this year. The modern surgery began one hundred years ago when the first of Joseph Lister's articles entitled "A New Method of Treating Compound Fractures" appeared in the Lancet of 16th March 1867. The first published account of the application of the new system to operation wounds appeared in an article entitled "The Antiseptic Principle in the Practice of Surgery" in the British Medical Journal of 10th August of the same year. This article has now been reproduced in the 1st April 1967 issue of the British Medical Journal. These contributions opened a campaign that revolutionized surgical practices in the world.

The use of an antiseptic for disinfecting the surgeon's hands was first shown by Semmelweiss in 1847 to prevent sepsis in midwifery. But the fact that living organisms cause sepsis was then unsuspected. It was Lister who knowing of Pasteur's work set out for the first time to employ a chemical with the specific object of destroying micro-organisms. In this connection it is worthwhile to quote Lister's

own statement on the newly discovered germs :—

"With regard to the mode in which the atmosphere produces decomposition of the blood, we now know, thanks to the beautiful researches of Pasteur, that the active agents are not the gaseous elements of the air, but minute living organisms suspended in it, which, by developing in a decomposable substance, determine a change in its chemical arrangement analogous to the fermentation of sugar under the influence of the yeast-plant."

Lister's antiseptic surgery was followed by aseptic surgery and by many other discoveries and applications which have further revolutionized the practice of surgery in the modern world. Whatever these developments have been since Lister's discovery, he deserves to be remembered, honoured and acclaimed as one of the greatest benefactors of man-kind. It is not even fanciful to suggest that Lister began something which has culminated not only in discovering better antiseptics such as, acridines, chlorhexidine etc. but also in the discovery of chemotherapeutic drugs like sulphonamides, and antibiotics like penicillin and others. It may also be said that even with these latest discoveries there may yet be a place for the antiseptics because these have the advantage of not producing resistance in bacteria which the antibiotics and the sulphonamides often do.

Joseph Lister, (later Lord Lister) was born in Upton, now a part of London, on 5th April 1827 as a son of Joseph Lister, a prosperous merchant but devoted to study and research (optical research). The latter discovered the best method of correcting chromatic aberration and was elected a Fellow of the Royal Society of London. Thus being born in a family with scientific environment, even as a schoolboy Lister performed some dissections and expressed a wish to be a surgeon. He took his B.A. degree from London University in 1847 and his medical course at the University College, London, where he came under the influence of several distinguished men like Sharpey, Jones, Grant, Graham and Ellis. He pased M.B. London with honours in 1852 and in the same year obtained F.R.C.S. England.

The most eventful episode of his life is his campaign against hospital sepsis and the use of carbolic acid as an antiseptic shield against wound sepsis. His new doctrine had a mixed reception, some praising and others decrying it. However, it stood the test of time and eventually the entire medical profession accepted him as an accredited leader of the then antiseptic surgical practices. Lister always acknowledged his debt to Pasteur who also on his part greatly admired Lister's surgical application of his work. When Lister came to Paris to present his laudatory address on the occasion of celebration of Pasteur's 70th birthday, Pasteur rose up and embraced him. Lister contributed many other improvements to surgery which are well known to the medical world. In 1895 he became the President of the Royal Society, in 1897 he was raised to the Peerage and in 1902 he was awarded the Order of Merit. This eventful life ended on 19th February, 1912.

Let his memory live with us in all future generations to come !

S. C. S.

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BOOK REVIEW

Induced Change in Health Behaviour—A Study of a Pilot Environmental Sanitation Project in U.P.—Kamal Krishna—cyclo-styled report published by the Planning Research and Action Institute, U.P., Kala Kankar House, Lucknow (January 1967).

The large number of health and other programmes launched in India since independence have, inevitably, resulted in a plethora of official, semi-official and unofficial reports. The great majority of these have bred true type, i.e. badly printed, poorly written and full of misprints dispite, in some cases, of thin expensive get up. The subject of the present review, however, differs from the usual run of such reports in several respects. Cyclostyled on cheap paper and bound in a flimsy cover with a simple design it avoids all claims to presentiousness.

In about two hundred type-written pages the report embodies the findings of a study undertaken by the Planning, Research and Action Institute, to evaluate, mainly, the impact of environmental sanitation projects in selected areas of rural Uttar Pradesh. While illuminating the well known, but not often admitted, diffciencies of such projects in the technical, sociological and administrative fields, this report had made no attempt to apportion blame nor to overpraise. Supported by carefully documented data, the narrative discusses at length the epidemiology of uncompleted latrines and unused tubewells, as it were. A competent technical report which at the same time is very readable. This should be a valuable requisition for anyone lay or professional interested in the National Health Programmes.

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