

SOCIAL ASPECTS OF HEALTH CARE IN IGBO-ORA, NIGERIA

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ABSTRACT

The philosophy and, aims of a health care scheme in Igbo-Ora, Nigeria, are outlined. Some of the problems related to creating a data base from which work can proceed are set out and discussed. Social factors are mentioned and attention is drawn to the need for seeing health problems against general settings specific to a given area rather than measuring up to some abstract or "scientific" standards. The uncharted ground in many third world practices makes this particularly important.

In 1964 Professor T.O. Ogunlesi, Director of the Ibarapa Project, wrote¹:

"In many parts of the world the idea that medical education is a series of events of learning taking place in the highly selected sick population of a large teaching hospital is being questioned. This population is a sort of centrifugal specimen derived from the total world of illness. The deposit may contain the more obviously weighty particles but it is open to question whether it necessarily contains the more important. It is more and more obvious that the medical teaching complex must include a representative segment of the normal community in its catchment area and must put itself in the way of studying disease in all its guises and magnitudes. The physician must of necessity be an ecologist. He must realize that his patient has desires, hates, loves, beliefs, habits (public or private) and patterns of. Association with his fellows which influence his health. The sun which shines on him, the rain which falls on him, and the composition of the very ground beneath his feet have a bearing on the quality and volume of sickness which may assail him during his lifetime.

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"This approach is particularly important in a West African setting, where the total burden and pattern of illness, the evolution of disease in the individual and the long-term effects of apparently trivial complaints are at present ill understood.

"Not only can this, but the problem of providing remedial services only be worked out in the field. Battles of this sort cannot be fought entirely In offices or laboratories".

The Health Care Project

The Ibarapa Project, therefore, came into being in 1963 involving the Rockefeller Foundation, <the Nigerian Government Rural Health Centre at Igbo-Ora, the Ibadan University, and the London School of Hygiene and Tropical Medicine and the Liverpool School of Tropical Medicine.

Igbo-Ora town is a rural town of some 35,000 inhabitants, and Ibarapa district has another 1, 00,000 people. Having said this much, we soon realized that, before one could start on either a programme of health care delivery, of teaching medical students or of coming to any decision of what kind of medicine was appropriate for the people concerned , we had to create a knowledge base. Any academic and or practical exercise can only be meaningful if some evaluation is possible, and in order to assess the effects of care one needs to know the point of departure. In practice, we found we knew nothing. There were health centers in the region, there were mid wives, and they kept records of drugs used, of deliveries carried out, but these figures were meaningless without some idea of what proportion of people they represented. We needed to discover age and sex characteristics, residence patterns, occupational patterns, morbidity figures, fertility statistics, let alone assess the health status of the populations prior to the inception of the project.

Hence, the first activities were not medical at all but concerned with the collection of vital statistics establishment of some sort of record systems and an investigation of family patterns and social and economic activities.

Our very first endeavor was a geographical mapping of the district by helicopter to discover where villages and homesteads were actually located. There was also available census data, but some of the information had inherent difficulties, viz,: In the Nigerian census definition, a town is any place of more, than 5,000 inhabitants. But government nomenclature in the medical service called the Igbo-Ora Health Centre a rural one. Nevertheless, to most observers this community is primarily a rural one, where the large majority of men are engaged in farming and where even craftsmen work plots of land sufficient at least to grow food for their own immediate requirements.

There were in 1963 no essential services, i.e. no piped water supply or electricity. Re-diffusion extension speakers could be found in most compounds broadcasting news, music and information services, much of which was in English, thus serving to disseminate the lingua franca of a nation divided by a bewildering number of vernacular dialects. In Ibarapa itself there were people of Oyo and Egba origin.

Housing arrangements reflect kinship patterns. It was of considerable relevance that medical students were not necessarily familiar with the type of domestic group commonly found in rural areas. Increasingly, as elite groups came into being students may have become somewhat remote from rural life because many of them attend residential schools and universities and need to be taught some basic social facts about their own society.

Increasingly, as medicine sees patients not as cases of disease but as members of social groups with health problems that may be interconnected with their total personality and social setting, teachers realize that it is necessary to expand the curriculum to include sociology. To mature people it is often astonishing to find how little awareness the young have of the social and emotional world around them. Since such insight appears to be a matter of life experience, it is necessary to accelerate this learning through academic input for aspiring doctors.

Social Factors

Most men have two or more wives. Polygamy is possible because owing to migration - and possibly differential child

mortality there is an excess of females over males. Furthermore, the expectation of either sex is not for companionship and equality, but marriage is primarily seen as a pro creative union and leaves the two sexes free to live lives very much apart. Marriage in Yoruba land is not terribly stable, since in such a situation there are on the whole few emotional bonds between the spouses. In addition to this, it is usual for a group of brothers to live together, so that a number of men and their wives and children and sometimes their parents too will result in an average household group of some 20 to 30 persons. But despite common accommodation there are very marked distinctions drawn by the members of each smallest group of a woman and her own children, and, far from being a homogeneous group, people are very much aware of their various sub groupings. Children will always in the first instance look to their own mothers, and though it is common for women to go out to market or other work leaving their children in the care of co-wives or relatives, the chances of preferential treatment are acknowledged and the dangers befalling a motherless child are well recognized. All children know their father, but the closest ties are formed with the mother, and in a society where marital ties are less strongly invested with emotional significance the bond to the mother remains one of the strongest affects throughout life.

For nutritional studies it is indeed important to distinguish between the census definition of a "household" and the *de facto* group of people "eating from the same pot" who are likely to be a subgroup of the household. Similarly, any genetic studies must establish differences between full or uterine siblings and classificatory siblings who may have the same father but different mothers or even only be cousins.

However, one of the most problematic and, in a sense, intractable problems is the need to establish what constitutes a "healthy" or "normal" state in different populations. Most medical teaching is at least initially based on standards derived from Western populations, and it is only through practice in different areas, climates, ethnic groups and nutritional standards that we begin to recognize that there may be variable norms to fit such conditions. A typical example is the definition of prematurity based on weight. U.K. teaching used to draw the dividing line at a birth weight of five and a half pounds. However, with lower average height, different nutritional standards, etc., this

may well be a wrong standard., and four and a half to five pound infants could be perfectly mature and viable. Similarly, hemoglobin levels in Igbo-Ora mothers were below those of Western standards and were quite compatible with health. Not only are such differences of great scientific interest but unless recognized and accepted such matters could well lead to wrong policies in health care. Dr. Geoffrey Alnsworth Harrison pointed out, for instance, that where populations are subject to endemic famine it would be unwise to adopt a method of infant feeding that results in large adults with correspondingly greater food consumption². Perhaps an obvious point, but the implications for health education are far-reaching.

Even a brief attendance at a health centre like Igbo-Ora highlights the importance of social components in rural medicine. Indeed, startling and dramatic illness and accidents tend to find their way to district and teaching hospitals anyway. The problem of improving the everyday lot of rural populations is more diffuse and troublesome and may need considerations of a socio-medical or even public health point of view rather than a strictly medical approach. Yet, the contribution to general well-being and even to efficiency will be far greater than that achieved by the great popular drama of the large hospital.

One of the reasons for the establishment of the Ibarapa project was the need to demonstrate to students this very point. It is understandable that young enthusiastic doctors in the making tend to be disappointed when told that the un-glamorous activity of a rural general practitioner has a greater contribution to make than the illustrious consultant at a big teaching hospital. Yet the scientific relevance of establishing health norms in as yet uncharted populations may in the long run be more important. There are dormant questions, such as: what are normal ranges of blood pressure for people living on certain types of diet? What are the prevalence's of certain degenerative diseases? There are many misconceptions about the presence or absence of cancers, etc. which would greatly benefit from careful survey work. The research contribution of apparently simple investigations could be far-reaching indeed, both on the purely scientific front and from the point of view of planning health services.

It is only after one has some measure of likely needs that proper decisions on provision of services can be made.

Again, it is likely that social considerations will be as important as purely medical ones. A certain amount of malaise may indeed be the result of factors concomitant with the presence of a health team which is usually symptomatic of social change occurring on a fairly wide front.

Questions that arise will be concerned with choices between preventive and curative services and will involve some very difficult ethical problems. Certain investigations that are of scientific interest may well create awareness of needs. For instance, if a population is to be tested for incidence of tuberculosis there must be an implicit understanding that cases so discovered are to be treated. Otherwise there is a situation in which populations are exploited in the interest of medical knowledge. Since, however, treatment is often protracted and cure not necessarily certain, there is considerable danger that goodwill becomes exhausted. Almost everywhere people start off with high expectations from health teams and hence they will at first be fairly co-operative towards investigators. But most systems find that it is impossible to satisfy the need for health care as increased knowledge, increased self-awareness and higher expectations of what constitutes fitness provide a totally elastic demand. Once people have realized that treatment is possible they are usually both insistent on its provision and intent on having the best possible care.

Planning must, therefore, start to some extent prior to an assessment of needs because expectations will be geared to the experience of early contacts. If it is improbable that the use of fully trained doctors is either necessary or desirable for wide coverage, it is advisable to work with paramedical personnel throughout, since it is totally unacceptable to staff a health centre by doctors and later to replace them by nurses or dispensary workers. The personality of health workers is itself often decisive in this kind of work. Igbo-Ora health centre had an object lesson in this when attendance figures dropped dramatically after an extremely pleasant, efficient and sympathetic sister was displaced by an authoritarian person who tended to regiment patients. It was then that we realized how problematic the interpretation of attendance figures is. Presumably people continued to suffer conditions that had hitherto brought them to the centre for treatment but they now felt that alternative methods of dealing with their problems were preferable.

It would, have been quite possible, therefore, to have gained the impression that the lower attendance figures were expressive of felt needs if the sister in-charge at the inception of the scheme had been less congenial. In other words, as long as one relies on voluntary attendances at health centers and hospitals the emergent picture of people's health status is likely to be false. Hence any exhaustive programme ought to be based on house-to-house visiting and monitoring, even if this can be carried out only on a sample basis.

The dilemma, therefore, consists of the conflicting interests of health planners on the one hand and medical schools on the other. In order to provide effective services, input of paramedical personnel may be the method of choice. But if young doctors are to be motivated towards general practice in rural areas they need to be given experience of such work as well as to be made to understand the unique opportunities for research that exist here. At Igbo-Ora the interests of the medical school carried the day. The scheme was highly successful in attracting WHO and other institutions to carry out research.

However, because of the historical accident that exposed people to medical school medicine first, there is now little alternative to this type of care system. Once expectations have been roused to think in terms of access to fully qualified doctors it is extremely difficult to persuade people that a wider coverage by paramedical personnel with careful referral practices will give them a better service. Oddly enough, prevention is very hard to sell. This is to some degree a question of need perception. Acute illness obviously requires treatment, but treatment to avert it seems to have less priority. In a sense questions of choice confront all health planners, and the ethical dilemma of saving a known patient at the cost of, say, immunizing a whole village remains extremely problematic. As long as resources are limited this kind of choice has to be faced. The message of Igbo-Ora is at least in part that social considerations are important. Social investigation is relatively cheap; it can save medicine false steps and thereby point ways to maximizing resource utilization.

Conclusions

Social factors are particularly important considerations

in developing countries where Western medicine that arose in the setting of urbanized technological societies is confronting cultures and social attitudes which may 'have their roots in a very different tradition. The mistake of regarding human bodies as mere physical entities can be costly as well as psychologically damaging. Indeed there are signs that a proper dialogue between these two points of view may have much to offer both sides. The realization of psychosomatics is of relatively recent advent in the West, and conversely immense strides towards better health for rural populations can be made by relatively simple public health measures. But a proper balance does require sensitivity and awareness of social and emotional conditions over and above an understanding of biological facts.

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QUALITY OF MEDICAL CARE BY CENTRAL GOVERNMENT HEALTH SCHEME - A STUDY

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ABSTRACT

This study reports findings on the time spent by CGUS medical officers per patient in different, medical care activities for 2,115 patients, as obtained by time study technique. This study was conducted during the year 1976-77.

The average observed time spent by the medical officer per patient was found to be 117.15 seconds per patient. The medical officers elicited only main complaints without asking past and family history in 84.44 per cent of patients and the average time spent on history taking was 42 seconds per patient which also included examination of identify card, recording of name, age and sex of the patients. Physical examinations were conducted in only 23.88 per cent of patients and the time spent per patient was 45.93 seconds. The advice for investigations was imparted in 2.60 per cent of patients, though the facilities for routine laboratory examinations were available in the dispensaries. Advice to the patient regarding dietary instructions and general advice was exclusively given in only 5.20 per cent of cases whereas the family planning/health education advice to the patient was given only in 0.76 per cent of patients.

The medical officers are aware of the inadequate quality of medical care provided to the beneficiaries and they felt they should at least

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spend 6.83 minutes for an old patient and 12.42 minutes for the new patient. Probably they are not able to do so because of long queues in the dispensaries during peak hours. Hence to improve the overall medical care and provide comprehensive care to the beneficiaries it is suggested that the medical officers can be given certain beneficiary population and made responsible to them.

The Contributory Health Scheme was introduced in 1954 by the Central Government to provide comprehensive medical care services to its members and their families. At present the scheme provides medical care to about 4.8 lakhs Government employees and other categories of persons in 13 cities where this scheme is in operation through 180 dispensaries having approximately 1000 medical officers and specialists. Among these, 63 are allopathic dispensaries catering to the needs of 10.75 lakhs beneficiaries in Delhi and New Delhi alone¹.

The dispensary service is the backbone of the scheme which provides outpatient and domiciliary services to its beneficiaries with free supply of prescribed drugs. These services are duly supported by investigations, specialists consultation and hospital services including maternal child health and family planning services.

A scheme of such a wide coverage covering the enlightened urban population needs to be assessed periodically in terms of its efficiency and effectiveness in the present and future context. This is particularly so because the scheme has been facing the problem of excessive workload for the medical officer, especially in Delhi.

The present study was conducted during 1976-77 to examine the type of services provided by the medical officer and their reaction towards the workload and quality of care provided to the beneficiaries.

Specific objectives of the study are:

1. To examine the type of care provided to the beneficiaries in terms of time spent, activities performed etc. for each patient.
2. To examine awareness of adequacy of services provided amongst the medical officer.

3. To determine the optimum time to be spent per patient for adequate medical care as felt by medical officer.

4, To suggest measures for the improvement of quality of medical care provided to the beneficiaries.

Materials and Method's

To study the above objectives the data collected by time study of medical officers in Central Government Health Scheme dispensaries in the earlier study "Time Utilization of Medical Officers in CGHS Dispensaries" was further analysed².

In addition to the time study, interviews were conducted with GDMO's of observed CGHS dispensaries. For this purpose an interview schedule was designed to ascertain their views on the workload, job satisfaction, awareness of their duties, time spent on patient, problems and suggestions, etc., to improve the working of CGHS dispensaries to attain the desired objectives of the scheme as laid down by the Government.

Findings

The CGHS dispensaries function during morning and evening hours to facilitate the Government employees to visit these dispensaries whenever required without affecting their working hours. Under the present system of working of the dispensaries every patient attending the dispensary has to bring the identity card popularly known as token card. On arrival at the dispensary the patient reports to the registration clerk from whom he obtains the token number for the doctor attending on him. In case of new patient, he can get the token number for the doctor of his choice. However, the registration clerk keeps a watch to ensure that the patients are equally distributed amongst the doctors as far as possible.

Findings of the Work Measurement (Time Study)

The quantitative aspect of medical care; It was observed that there was no job description prescribed for the medical officers. However, they were supposed to provide medical care (advice and treatment) to the beneficiaries. Hence, the job of medical officer as perceived by the observer, was

broken down into different activities for the purpose of work measurement. During the period the 23 medical officers examined 9,874 patients, of which 2,115 were actually observed in rounds for 7,585 minutes and 50 seconds. Table 1 shows the total time for which each medical officer was observed and the number of patients observed during this period.

The time period for which the medical officers were observed varied with each other because whenever one medical officer was absent he could not be observed reducing his time observed while increasing the time observed for others who shared the workload in his absence.

TABLE 1
SHOWING THE TOTAL OBSERVED TIME AND NUMBER OF PATIENTS OBSERVED BY
MEDICAL OFFICERS DURING THE STUDY PERIOD

Stratum	Dispensary	Si. No. of Medical Officer	Time observed in minutes & seconds	Number of patients observed	Average observed time per patient in seconds
I	1	1	328.10	64	143.43
		2	223.50	57	92.69
		3	364.10	87	129.31
		4	488.15	120	115.37
		5	332.00	90	96.75
II	2	6	252.10	86	78.15
		7	248.10	87	100.68
		8	292.13	43	129.42
		9	256.30	82	104.82
		10	216.50	69	111.52
		11	475.15	102	131.76
		12	227.10	45	138.66
		13	45.10	20	100.50
II	3	14	527.17	118	133.33
		15	577.17	179	114.72
		16	224.30	70	108.86
		17	587.00	240	88.50
III	4	18	239.24	51	125.88
		19	356.15	118	110.72
		20	373.30	91	166.64
		21	334.30	147	109.49
		22	302.21	72	194.37
		23	318.28	87	133.10
Total		23	7585.50	2115	

Average time spent by medical officers per patient: The average time spent per patient by the medical officers was 117.15 seconds with a standard deviation of 70.10 seconds. The average time spent per patient ranged from 78.15 seconds to 194.37 seconds. This average time spent was observed to be different in the strata's. It was 115.4 seconds for the patients in stratum I dispensaries, 108.8 seconds for the patients in stratum II dispensaries and 134.8 seconds for the patients in stratum III dispensaries. This was because in stratum I and II dispensaries there was a proxy presentation of the patients who came to collect medicines for the patients whereas in stratum III dispensaries the patients came themselves for the examination and treatment.

Average time spent per patient by age: It was found that medical officers examined 544 children below age 12 and 1,571 adults and they spent more time with a child (Av. = 128.38 seconds; s.d. = 77.7 seconds) as compared to the adult (Av. = 113.07 seconds; s.d. = 66.1 seconds). This difference was statistically significant ($t = 4.36$; $p < 0.05$).

Average time spent per patient by the type of patient: The average time (124.87 seconds; s.d. = 72.8 seconds) spent per patient by the medical officer was more for new patients (976) as compared to the average time (107.81 seconds; s.d. = 65.7 seconds) spent per patient for old patients (1,139). This difference was statistically significant ($t = 5.67$, $p < .001$).

Average time spent per patient by type of disease groups: While adopting the CGHS classification of disease groups; 2,115 patients under the study could be categorized for 48 disease groups only. It was further observed that 80 per cent of the patients were treated for 17 disease groups, 15 per cent for 13 disease groups and the remaining 5 per cent for 18 disease groups (Table 2).

It may be seen that the average time spent per patient in the major 17 disease groups varied from 87.21 seconds for the patients suffering from the diseases of the digestive system teeth and gums to 152.22 seconds for the patients with pyrexia of unknown origin.

Qualitative Aspect of Medical Care

Type of direct medical care activities performed by

Medical officers: Direct medical care to the patients is the major service being performed by CGHS dispensaries. This has been further broken into seven elements.

TABLE 2
DISTRIBUTION OF PATIENTS FOR MAJOR DISEASE GROUP AND GROUP WISE
AVERAGE TIME SPENT PER PATIENT

SI. No.	Disease Group	Number of spent patients seconds	Percentage	Average time per patient in
1.	Diseases of respiratory system	478	22.61	139.02
2.	Injuries	150	7.10	93.00
3.	Acute pharyngitis (common cold)	141	6.67	114.26
4.	Diseases of digestive system other than dysentery, teeth, gums and gastroenteritis, colitis	131	6.19	113.13
5.	Avitaminosis and deficiency disease	100	4.73	89.40
6.	Disease of musculoskeletal system Rheumatism	95	4.40	111.16
7.	Infection of skin	77	3.64	114.35
8.	Other skin diseases	67	3.12	102.95
9.	Diseases of genitourinary system	64	3.03	144.38
10.	Mental deficiency diseases (anxiety neurosis)	60	2.84	129.75
11.	Diseases of eye except trachoma	58	2.74	123.36
12.	Bronchitis and others	56	2.65	151.07
13.	Pyrexia of unknown origin	54	2.55	152.22
14.	Allergic disorders except Asthma	49	2.32	108.37
15.	Allergic disorders – Asthma	43	2.04	127.32
16.	Diseases of digestive system, teeth and gums	43	2.04	87.21
17.	Dysentery all forms	43	2.04	115.46

The activity of issue of special chits was only observed in 1,295 patients during the period of study. The percentage has been calculated on this figure only, while the percentage for the rest has been computed on 2,115 patients on which all these activities were observed.

The Table 3 showed that though the medical officers were supposed to perform seven activities per patient, they mostly performed only two activities, namely, history taking and prescription writing. Prescription writing was done in 92.76 per cent of the patients and history taking in 84.44 per cent of patients. The average time spent for these activities was 50.24 seconds and 42 seconds respectively. Physical examination was done in only 23.88 per cent of patients for which the average time spent was 45.93 seconds. Surprisingly enough the medical officers gave advice to patients regarding their treatment and medicines exclusively only in 5.29 per cent of patients and average time spent on this activity was 45 seconds, whereas advice for family planning and health education was observed to be practically nil (0.76 per cent) during the study period. However, it was observed that in 40

TABLE 3
ACTIVITY WISE AVERAGE TIME SPENT PER PATIENT (IN SECONDS)

Sl. No. of Activity	Activities	Number of patients	Percent- age of patient	Average time per	Standard deviation
A	History taking	1786	84.44	42.00	23.22
B	Physical examination	505	23.88	45.93	29.19
C	Advice for investigation	55	2.60	50.09	25.92
D	Issue of special chits	810	63.17*	45.73	23.37
E	Prescription writing	1962	92.76	50. 24	26.00
F	Advice to the patient	112	5.29	45.00	28.15
G	Family Planning/Health Education Advice	16	0.76	4.12	26.51

*The activity of issue of special chits was only observed in 1295 patients during the period of study. The percentage has been calculated on this figure only, while the. Percentage for the rest has been computed on 2115 patients on whom all these activities were observed.

per cent of cases the advice to the patient was given concurrently while the prescription was being written by the medical officers.

The activities viz. history taking, physical examination, prescription writing, and advice to the patient, were performed more frequently among the new patients as compared to old patients. These differences were observed to be statistically significant as presented in Table 4.

Similarly, the activities like physical examination, advice to patients and health education advice were performed by the doctors more frequently among the children as compared to the adults.

The activities of physical examination: The physical examination which should have been conducted in the majority of the patients has only been performed in 23.88 per cent of the patients. It was observed that of the 869 total sub-

TABLE 4
DISTRIBUTION OF OLD AND NEW PATIENTS BY THE MEDICAL CARE ACTIVITIES
AND AVERAGE TIME SPENT PER PATIENT IN SECONDS

SI N	Activity	Number of old patients	Average time in seconds	Number of new patients	Average time in seconds	Total	*a
A	History taking	806 (82.58)	39.56	980 (86.04)	44.01	1786	2.20 signi- ficant
B	Physical examination	176 (18.03)	47.53	331 (29.04)	45.09	507	2.29 signi- ficant
C	Advice for Investigation	21 (2.15)	55.48	34 (2.98)	46.76	55	
D	Issue of special chits	358 (36.68)	47.15	460 (40.38)	44.63	818	
E	Prescription writing	894 (91.59)	49.12	1068 (93.75)	51.19	1962	5.55 signi- ficant
F	Advice to the patient	36 (3.68)	46.39	76 (6.67)	46.97	112	3.29 signi- ficant
G	Family Health Planning/ Education Advice	4 (0.41)	42.50	12 (1.05)	43.33	16	

Figures in parenthesis represent percentages, *a =
'standard normal variate.

elements of physical examination by the medical officers, throat examination had the highest frequency of 334 followed by auscultation of lungs (210), while the least frequency was that of auscultation of heart which was done only in two cases (Table 5).

It was observed that amongst the patients treated for the diseases of respiratory system (776) the pulse examination was done in 58, temperature in nil, throat in 250 and auscultation of lungs and heart in 146 and nil patients respectively. Similarly, amongst the patients treated for the diseases of digestive system (224), the palpation of abdomen, liver and spleen was done in 27, 2 and 2 patients respectively, tongue was examined in one and teeth and gums in four patients. This shows that though certain minimum physical examinations are necessary before diagnosing and treating the patients, yet it is not being performed by the medical officers.

It may be pointed out that at least three types of physical examinations need to be performed before treating the patients in majority of the disease groups but only one physical examination was performed in 223 patients (10.54 per cent), two in 214 patients (10.12 per cent), three in 61 patients (2.88 per cent) and more than three in only 7 patients (0.33 per cent).

TABLE 5

DISTRIBUTION OF THE TYPE OF PHYSICAL EXAMINATION CONDUCTED BY THE MEDICAL OFFICERS ON THE PATIENTS DURING THE PERIOD OF OBSERVATION

Sl. No.	Physical Examinations	Number performed
1.	Pulse	101
2.	Temperature	8
3.	Blood Pressure	227
4.	Throat examination	334
5.	Inspection of the part	85
6.	Palpation of abdomen	63
7.	Palpation liver	8
8.	Palpation spleen	5
9.	Auscultation lung	210
10.	Auscultation heart	2
11.	P.V. examination	6
12.	Palpation back	
13.	Tongue	
Total		869

Activities of investigations advised: Only routine laboratory investigations are being conducted in the CGHS dispensaries, blood tests are generally advised for TC, DLC, Hb %, and ESR. Complete urine examination was advised including tests for sugar, albumin, reaction, Sp. gravity and microscopic examination. The stool examination was advised mainly for parasitic infections i.e. ova of helminthes. The quantum of laboratory investigations recommended is presented in Table 6.

No investigations were advised by the medical officers for 97.40 per cent patients. One type of investigation was advised in the case of 39 patients (1.82 per cent), two in 11 patients (0.52 per cent), three in three patients (0.14 cent) and four in two patients only (0.09 per cent).

It was observed that amongst the patients treated for the disease of digestive system (224), the advice for stool and urine examination was given to 11 and five patients respectively. Similarly, amongst the patients (64) treated for genitourinary system, the advice for urine examination was given to five patients and blood examination to one patient only.

Interview with Medical Officers

Out of 23 medical officers observed during the study, 20 were interviewed while the rest could not be contacted as

TABLE 6
TYPE OF INVESTIGATIONS ADVISED BY MEDICAL OFFICER DURING THE PERIOD
OF OBSERVATION

SI. No.	Type of investigations advised	Number advised
1.	Blood examination	27*
2.	Urine examination	19
3.	Stool examination	22
4.	X-ray examination	1
5.	Throat swab culture	1
Total		70

*Includes 4 blood sugar examinations.

they were transferred to other dispensaries. The responses of the medical officers to the questionnaire schedule have been grouped under four major headings.

Awareness of duties: Respondents were not aware of any job description prescribed for them but all of them agreed that their main duty was to provide medical care to the beneficiaries both in the dispensary and at home. They were not aware of the concept of comprehensive health care as laid down by the CGHS in its objectives.

Job satisfaction: All the respondents (100 per cent) were able to carry out assigned duties without any difficulty. According to them they spent on an average 4.92 hours in clinical work, 0.61 hours in domiciliary visits and 0.47 hours in other duties including official work, out of their daily six hours' duty.

Seventeen respondents (85 per cent) were of the opinion that the staff provided in the dispensaries was adequate while three (15 per cent) disagreed on this point. They wanted more staff and indicated the requirement of one additional officer to be assigned for domiciliary visits and to act as a substitute in case one medical officer was on leave.

Workload: Four respondents (20 per cent) were of the view that the workload was excessive, 15 (75 per cent) found it moderate while one (5 per cent) considered it just sufficient. They thought that at present they were devoting 1.99 minutes (range 1.25 to 5 minutes) for an old case while 4.2 minutes (range 2.50 to 10 minutes) for a new patient on an average.

Distance covered for domiciliary visits was maximum 4-1/2 kms and minimum 1/2 km. with an average of 2.12 kms. The time spent on domiciliary visits on an average was 25.46 minutes per visit, with a range of 12.05 to 38.88 minutes. To reduce the frequency of home visits, it was suggested that normal fee should be charged for. Domiciliary visit.

All the respondents agreed that they felt it necessary to provide preventive and promotive health services including improvement of physical and social environment of the beneficiaries to reduce the sickness among them and thus lowering the workload on dispensaries.

Standard time for medical care: The respondents were of the view that on an average they should spend 6.85 minutes for an old patient and 12.42 minutes for a new patient, to provide him a satisfactory medical care. The average time ought to be spent on each activity of patient care stated by the medical officers is shown in Table 7.

It may be pointed out that the time study indicated seven activities under direct medical care but the respondents stated only five activities. This was because the respondents felt that the activities of special chits writing, family planning and health education advice and advice to the patient were the part of prescription writing.

Discussion

The meagre time a medical officer spends on a patient in the scheme is in itself an indirect indication of the quality of medical care. According to findings, history taking was confined in only 84.44 per cent patients. Only complaints were elicited without enquiring the past and family histories. On an average only 42 seconds per patient were spent for eliciting the history which by any standard is significantly insufficient. This time of 42 seconds included time for examination of identity cards, recording name, age, sex and main complaints of the patient.

TABLE 7

AVERAGE TIME OUGHT TO BE SPENT ON A PATIENT FOR SATISFACTORY MEDICAL CARE (IN MINUTES)

Sl. No.	Activity	Type of patient	
		Old	New
A.	History taking	1.33	3.31
B.	Physical examination	2.15	3.86
C.	Advice on investigation	1.04	1.72
D.	Prescription writing	1.51	1.92
E.	Advice to patient	1.07	1.33
Total		6.85	12.42

Physical examinations which should have been conducted in all the cases were limited to 23.88 per cent patients. Most of these examinations were hurried and inadequate. The time spent for this activity per patient was found to be 45.93 seconds only. Maximum frequency of physical examinations was for throat (334) and minimum for auscultation of heart (2). In most of the cases coming for all types of respiratory diseases (776) only throat examination was done while auscultation of lungs was done only in 210 patients

The investigations advised by the medical officers to confirm their diagnosis was done in 2.60 per cent of cases. Most patients with disease groups like gastro-intestinal infections, parasitic infections, metabolic diseases and urinogenital infections which required proper laboratory investigations were not advised. In all 70 investigations were advised, though the routine laboratory facilities were available in these dispensaries.

General lack of physical examinations and advice for investigations act as contributory factors in lowering the quality of medical care to the beneficiaries. Moreover, enough attention on the part of medical officers was not forthcoming for instructions to take the medicines, dietary advice and general advice to the patients regarding their illness, health education and family planning. This was done exclusively only in 5.29 per cent of cases. Family planning advice and health education which were essential components of preventive and promotive health care were completely neglected as only 0.76 per cent of patients received such advice.

Similar trends were also observed on the part of medical officer in primary health centers where they hardly conduct any physical examination or advise laboratory investigations, though each of the primary health centre is provided with a laboratory. The quality of care was also reported to be inadequate by Nayak in his study³.

On the one hand, the medical officers disposed of the beneficiaries in a rapid way; on the other they were unoccupied for 37.21 per cent of their time. There is, thus, a case for better management practices in these dispensaries for improving the quality of care.

Time studies conducted by the Staff Inspection Unit of the Ministry of Finance, Government of India, reported 2.7 minutes as the effective consultation time by the CGHS doctor⁴. The study conducted by Administrative Staff College of India, Hyderabad, on CGHS revealed that the average effective consultation time taken by the medical officer was 2.3 minutes for a new patient and 1.5 minutes for an old patient⁵. The methodology adopted in the quoted studies was work measurement and the effective time for consultation was computed by synthesis of loading factors. The data of this and the quoted studies give more or less similar results and confirm that the medical officers are spending between 1.5 minutes to 2.7 minutes per patient (old and new) in providing consultation to the beneficiaries.

The medical officers are aware of the meager time they spend with the patient and when they were asked to elicit their opinion regarding the time they ought to have spent per patient to provide satisfactory medical care reported that on an average they would like to spend 6.83 minutes for an old patient and 12.42 minutes for a new patient. This leads one to think that the medical officers of the dispensaries are "presumably aware of the inadequate quality of care provided in the dispensary. This may be due to the fact that long queues of the patients in the dispensaries during peak hours induce medical officers to dispose of the patients in a rapid manner.

At present, the medical officers render mostly the outpatient medical care to the beneficiaries and not the comprehensive medical care envisaged in the objectives of the CGHS. They were not even aware of this concept of comprehensive medical care as revealed in the responses of medical officers in interviews. The term comprehensive medical care implies the provision of curative, preventive and promotive health services to the individual cardholders and their families residing in a geographical area of the dispensaries. This means that the available doctor should remain concerned not only with the episodic illness of the individual patients reporting at the dispensaries but also with the factors which lead to these episodes and which govern their well-being and that of the community thus paving the way for attainment of positive health. Therefore, much needs to be done for providing integrated and comprehensive health care services by the medical officers to their beneficiary population as opposed to the care as at present given.

The quality of care, therefore, can be improved by increasing the consultation time of the patient and providing proper medical attention to the beneficiary population in the dispensaries. Further, family folders should be provided and the medical officers can be given certain beneficiary population and made responsible to provide comprehensive medical care to them. The beneficiary population registered with a CGHS dispensary thus can be rationally divided among the doctors of the dispensary taking into consideration the choice of the beneficiary. Reduction of sickness in the beneficiary population allotted to each medical officer should be taken as the criterion for evaluation of the performance of the medical officers. If, this is implemented there can be much improvement in the quality of medical care provided by the medical officers. These measures can also lead to active participation of the community and development of cordial doctor-patient relationship.

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A STUDY OF COMBUSTIBILITY OF WASTES OF TWO HOSPITALS FOR DETERMINING DISPOSAL BY INCINERATION

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ABSTRACT

Determination of quantity quality and characteristics of the wastes of two hospitals located in the same sector of a class B city was undertaken to review the present dumping method of disposal. On an average 1,424,71 and 224,6 kgs, of five types of wastes as per the moisture content were found daily for seven days in these two hospitals of 1000 general beds, and 600 long stay beds for chest tuberculosis and other Cardiothoracic diseases respectively. The wastes of first hospital had higher combustibility due to its sprawling nature and activities for general patients than that of the second multistory hospital treating special cases, A combustibility analysis of hospital wastes would help to decide whether to adopt incineration for disposal,

To strive for better living standards through diverse efforts and activities, man has reached a point of scientific and technological advancement of such magnitude that he is tending to upset the ecological equilibrium and thereby threatening the very existence of self. The air he breathes, the water he drinks, the food he eats is all getting polluted. The United Nations Conference on the Human Environment held in Stockholm in June 1972, has drawn the attention of the world community to this problem and has aroused wide spread interest¹. In developed countries like the USA and UK the imbalance in the ecosystem is through ever-increasing industrialization and consequent urbanization. Whereas in developing countries the environmental

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problems are mainly those of safe drinking water, housing, sewage and solid waste disposal. In India, efforts for pollution abatement through indigenous know how is gradually becoming discernible. In a symposium on Environmental Pollution at Nagpur in January, 1973 about 200 participants actively discussed how to arrest the environmental pollution to the bare minimum.

A hospital, by virtue of its nature of centre of concentrated human activity and housing people of different communicable and non-communicable health imperfections, generates wastes with high risk of pollution of water, air and land. Hence, a study to determine the quantity, quality and characteristics of wastes in two hospitals located in one sector of a class B city was carried out so that its combustibility for the purpose of disposal by incineration can be ascertained.

Material and Method

Of the two hospitals where the study was carried out, the first one is a general hospital with one thousand beds and is spread out over a sprawling area of about 50 acres. The second hospital of about 600 beds is situated in a multistoried newly constructed building providing care to long-stay patients of chest tuberculosis and other cardiothoracic diseases.

Present method of collection and disposal of wastes: All wastes including solid wastes, cook house refuse, ward wastes, floor, sweepings, surface foliage from the areas, biological wastes from operation theatres, laboratories and labour rooms are removed by sweepers of the hospitals routinely in baskets/buckets to different intra - hospital disposal points. The materials are then collected almost daily from these disposal points under arrangement of the local civil administration in a mechanized covered transport without tipping device for disposal by dumping in the outskirts of the city. There are 16 disposal points in the first hospital and two in the second hospital. Impervious hard standing is lacking in most of these points.

Four sweepers and one mate of the civil administration come with the transport every morning at about 9 A.M. for collection of waste materials from these hospitals. Total

collection time is about 3 to 4 hours in the first hospital. The same staff then moves with the transport to the second hospital and there the process of collection takes about half an hour. In case the waste does not reach the intra-hospital disposal points before the collection party of the civil administration arrives, these remain in the disposal points till the next trip of the collecting party for a minimum period of 24 hours. There are occasional failures of the collecting party due to transport bottlenecks or other administrative reasons.

Methodology: The hospital authorities notified the staff of the hospitals about this study and asked them to send the wastes produced in respective departments/areas during last 24 hours to the disposal points by 0900 hrs daily. For the purpose of the study at each disposal point all. Wastes were segregated according to their combustibility and moisture content into various types as given below, so that these can be disposed of by incineration to inert, odorless, non-polluting ash^{2,3}

Trash	- mixture of highly combustible wastes <i>e.g.</i> paper, cardboard, cartons, wooden boxes and combustible floor sweepings.
Rubbish	- Combustible wastes <i>e.g.</i> paper, rag, wood scrap, foliage, floor sweepings.
Garbage	- Animal and vegetable wastes from kitchen, pantries, dining halls, cubicles, and wards.
Refuse	- Approximately even mixture of rubbish and garbage by weight.
Pathological	- Human and animal remains, organs, and solid organic wastes from laboratories, OTs, animal house, cubicles and wards.
Type '0'	- 100% Trash - 10% moisture content
Type '1'	- 80% Rubbish, 20% Garbage 25% Moisture Content
Type '2'	- 50% Rubbish, 50% Garbage 50% Moisture Content

Type '3' - 65% Garbage, 35% Rubbish
60-70% Moisture Content

Type '4' - 100% Pathological
85% Moisture Content

Every day at about 10 A.M., for a period of seven days, all wastes were first sorted out into types 0 to 4. Items of similar nature e.g. glass pieces, plastics, and so on were also isolated separately. These were then put separately into gunny bags and weighed with the help of a spring balance. After weighing, the gunny bags were unloaded in the transport for final disposal to the dumping ground.

Results

The different varieties of wastes" in the first and second hospitals are given in Tables 1 and 2 respectively.

The total daily waste in the first and the second hospital varied widely, the figures being 1,425 and 225 kgs respectively. In the first hospital maximum quantity of wastes was contributed by combustibles like saw dust, wood scrap and the like, the average production being 681 kgs daily. In the second hospital, however, the maximum quantity was provided by the waste vegetables, fruit peelings and the like; here average production of these was 165 kgs daily. The first hospital produced about 132 kgs of coal ash daily which was absent in the second hospital since the cooking in the latter was with gas. Plastic scrap and glass materials contributed only negligible amount in both the hospitals. In the first hospital foliage contributed about 218 kgs daily; this was absent in the second hospital. Another significant difference was in the bandage and other textile materials. In the first hospital the average daily output was about 52 kgs. whereas in the second hospital this amounted to only 9 kgs. Biological wastes were 4.57 and 10.28 kgs in the first and second hospitals respectively.

The wastes of both the hospitals are shown type-wise in Tables 3 and 4 respectively.

In the first hospital highly combustible Type 1 waste constituted maximum proportion, the average being 676 kgs.

daily. In the second hospital production of Type 2 waste was highest; the average production was 186 kgs daily. In the first hospital in terms of quantum of production the wastes ranked as Type 1, Type 0, Type 2, Type 3 and Type 4 in that order. In the second hospital, however, the order of ranking was Type 2, Type 0, Type 3 Type 4 *and* Type 1.

The wastes in the first hospital far exceed that in the second hospital. In the first hospital it is about 1.5 kg.

TABLE 1
WEEKLY WASTE RECORD 1000 BED GENERAL HOSPITAL

Varieties of wastes	(Weight							In Kgs)	
	Mon-day	Tues-day	Wednes-day	Thurs-day	Fri-day	Satur-day	Sun-day	Total	Average per day
Paper, Cardboard cartons, wooden boxes	291	273	270	298	314	286	323	2055	293.57
Any other dry waste such as saw dust, rags, wood scraped.	719	705	685	669	716	670	601	4765	680.71
Waste vegetables	23	25	16	28	19	23	27	161	23
Waste cooked food	33	21	13	14	11	11	14	117	16.71
Bandages, gauzes and other material	70	65	47	53	38	49	41	363	51.86
Vials, ampoules, glass materials etc.	2	3	2	5	4	2	4	22	3.14
Plastic scrap	-	1	-	1	1	-	-	3	0.43
Biological waste	4	5	4	5	6	4	4	32	4.57
Foliage	140	113	274	253	265	248	235	1528	218.29
Coal ash	130	138	129	152	126	142	110	927	132.43
Total	1412	1349	1440	1478	1500	1435	1359	9973	1424.71

per bed/day, whereas in the second hospital it is only 0.38 kg. Per bed/day The difference is largely attributed to the vast area of the first hospital and the nature of its activity. Dry grass and highly combustible material were maximum in the first hospital, from the surfaces, lawns and gardens. These were absent in the case of the second hospital. In case of the second hospital waste vegetables, fruit peels contributed maximum waste because of less dissipation from two

TABLE 2
WEEKLY WASTE RECORD OF 600 BED HOSPITAL OF CHEST TUBERCULOSIS AND
OTHER CARDIOTHORACIC DISEASES

(Weight in Kgs)									Aver-
Varieties of wastes	Mo day	Tues-day	Wednes-day	Thurs-day	Fri-day	Satur-day	Sun-day	Total	age per day
Paper, card-board, cartons, wooden boxes, etc.	3	15	17	14	15	14	15	93	13.28
Any other dry waste such as saw dust, rags wood scraps etc.	2	3	3	3	5	4	5	25	3.57
Waste vegetable	166	168	162	163	165	167	163	1154	164.86
Waste cooked food	18	16	20	16	20	19	18	127	18.14
Bandages, gauzes and other cloth material	2	10	10	10	10	10	12	64	9.14
Vials, ampoules, glass materials etc.	2	3	3	2	2	3	2	17	2.43
Plastic scrap	1	1	1	2	1	1	3	10	1.43
Biological wastes	10	10	11	10	10	11	10	72	10.28
Others	4	3	1	-	-	-	4	12	1.71
Total	208	229	228	220	228	229	1232	1574	224.86

TABLE 3
TYPE OF WASTES OF 1000 BED GENERAL HOSPITAL FOR 7 DAYS

Days	Weight in kgs					Total weight	Coal ash	Remarks
	Type 0	Type 1	Type 2	Type 3	Type 4			
Monday	291	663	291	33	4	1282	130	1412
Tuesday	273	709	178	46	5	1211	138	1349
Wednesday	270	687	321	29	4	1311	129	1440
Thursday	298	675	306	42	5	1326	152	1478
Friday	314	721	303	30	6	1374	126	1500
Saturday	286	672	297	34	4	1293	142	1435
Total	2055	4732	1972	255	32	9046	927	9973
Average	293.57	676	281.71	36.43	4.57	1292.29	132.43	1424.71

TABLE 4
TYPE OF WASTES OF 600 BED HOSPITAL OF CHEST DISEASES AND OTHER
CARDIOTHORACIC DISEASES FOR 7 DAYS

Days	Weight in Kgs					Total Weight in Kgs
	Type 0	Type 1	Type 2	Type 3	Type 4	
Monday	5	2	180	11	10	208
Tuesday	14	.4	185	15	11	229
Wednesday	15	5	188	10	10	228
Thursday	13	2	188	7	10	220
Friday	15	5	186	12	10	228
Saturday	17	4	188	9	11	229
Sunday	15	4	190	12	11	232
Total	94	26	1305	76	73	1574
Average	13.43	3.71	186.43	10.86	10.43	224.86

cookhouses in a compact building in comparison to the same from seven scattered cookhouses of the first hospital in a sprawling perimeter. Moreover, a very few patients were on fluid, subsistence or nil diet (1 per cent of total diets) in the second hospital for long-stay patients, whereas much more patients (15 per cent of total diets) of the first hospital were on these diets. In the first hospital, since the patients were mostly acute short-stay cases, there was increase in quantity of bandages and other cotton materials. The pattern of other components of wastes were more or less the same except the biological wastes, which in the second hospital were comparatively more due to inclusion of days' sputum collection of chest tuberculosis and other thoracic disease cases.

In a study of pattern of wastes in Indian cities it was seen that quantity of refuse per capita per day varied from 0.481 kg. to 0.066 kg.; plastic and glass content were less than 1 per cent, paper content was 3 to 7 per cent, ash and fine earth were 30 to 45 per cent and the total compostable matter was 30 to 40 per cent⁴. The total quantity of hospital wastes somewhat followed the same pattern, but in composition the hospital wastes differed widely from that of a city.

In another study of city refuse in different seasons at Nagpur, it was found that ash and fine earth formed predominating fraction and it remained constant during different seasons for the city as a whole⁵.

As our society is becoming more and more progressive the amount of solid waste production is also increasing. An expert committee of the WHO observed that everywhere the amount of solid wastes produced each day per person was increasing as a result of social, economic and technological changes. The annual increase is currently between 1 and 2 per cent per year⁶. Hence average refuse in hospitals of Denmark and West Germany is 3 to 4 kg. per bed/day compared to 14 kg. per bed/day in USA⁷. The hospital being a social institution thus reflects the life-style in the society. These facts are important to bear in mind in the planning of disposal of wastes of hospitals.

It is also estimated that pathological and microbiological refuse may be up to 20 per cent of the total volume of

refuse from a large hospital². In this study the biological wastes from the second hospital were about 5 per cent in weight of the total wastes. Since wastes from hospitals contain various pathological remains, it has been recommended by the WHO that these should be collected separately from domestic wastes and burned in a well designed incinerator⁸. The other method could be to sterilize the infectious hospital wastes in suitable steam pressure containers and treated as normal 'domestic waste'⁹. However, some materials are of high biological values e. g. placenta from labor rooms, various types of tissues from OTs and laboratories and so on. These are just allowed to go waste in our existing method of disposals and various biological products can be explored from it.

Hospitals are increasingly using disposable plastic materials. Their disposal might also pose a problem as burning of plastic, particularly polyvinyl chloride produces hydrochloric acid which corrodes the plant as well as pollutes the air⁸.

Hospital wastes containing large quantity of Type 0, Type 1, and Type 2 wastes are of high thermal potential. If electrical incinerator is utilized for their disposal heat recovery boiler can be incorporated for production of steam to be used in mechanical laundry, CSSD and also for providing warm water for bathing in cold season; but heat recovery will be economically viable where large amounts of waste are burned over a long period of time¹⁰.

In view of the high combustibility of the wastes of the first hospital, final disposal by incineration in place of existing method of dumping may be worth considering, whereas the same is not identically applicable for the second hospital. A combustibility analysis of the contents of the hospital wastes can thus help to decide suitability of incineration for its final disposal.

Summary

The pattern of wastes in two hospitals of different types has been studied daily for a period of seven days. The nature of wastes and their combustibility were related to the type, activities, and spread of the two hospitals. The

hospital wastes resembled the solid wastes in cities conforming to prevalent life-style. Efforts can be made to gainfully utilize some of the hospital wastes. A combustibility analysis of its contents is suggested as a prerequisite before deciding incineration as the method of final disposal.

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QUALITY AND EFFECTIVENESS OF PHC LEVEL CLASS ROOM TRAINING UNDER MPW SCHEME

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ABSTRACT

Government of India has prescribed duration, curriculum and trainers for training of PHC field staff under multipurpose workers' scheme. The extent of implementation was studied in three States. Quality of training was also observed and its impact on knowledge and understanding was determined by comparing pre and post-test scores on different subject areas.

Centralized strategy for class room training with HFWTC as the venue was found to offer several advantages. By and large, Government of India's prescribed curriculum had been followed. Deviation had taken place mostly in the type of trainers. Topics and their sequence were well covered. There was, however, little use of training techniques to promote understanding and participation. In particular, there was lack of teaching aids at PHC level class room. Male field staff showed greatest need and profited most from the training. Knowledge of maternal and child health and family welfare was least in both male and female staff before and after the training.

Administrative factors affecting MO of PHCs as trainers were also determined.

This is second in the series of papers based on the project findings.

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The decision of the Central Government to accept the recommendations of the Kartar Singh Committee, and operate health services in rural areas through a single type of multipurpose worker capable of performing all health activities in a given area and population resulted in a massive training programme for health personnel at State, District and Primary Health Centre (PHC) levels¹. The end objectives were to raise and diversify the competence of field staff numbering almost two lakhs in rural areas so that they could serve the needs of all health programmes, rather than only one. To achieve this purpose, orientation training was given to the field staff at the PHC level. The quality and effectiveness of this training was one of the most important factors which would determine the success of the multipurpose strategy. Under this, the existing field staff had been divided into two categories of workers and assistants. The workers comprised the erstwhile basic health workers of the National Malaria Eradication Programme (NMEP), Vaccinators of the National Smallpox Eradication Programme (NSEP), family planning, health assistants/field workers of the national family welfare programme and trachoma health education assistants. To these were later added workers of cholera and leprosy control programmes. The assistants comprised the health/sanitary inspectors, malaria surveillance inspectors and smallpox supervisors.

At the time of the study (1977-78), Government of India's prescribed field staff training schedule was as given in Table 1.

TABLE 1
TRAINING SCHEDULE FOR FIELD STAFF

Category	Type of Training (in weeks)					Total
	Class Room	Practical Field	Practical Medical care	Practical at Taluka/District	Supervisory Training at HFWTC Hospital	
Health Worker (Male)	2	6	4	-	-	12
Health Assistant (Male)	2	6	7	1	2	18
Health Worker (Female)	2	4	4	-	-	10
Health Assistant (Female)	2	4	7	1	2	16

This paper is confined to an assessment of the two weeks class room training which was common for workers and assistants.

Objectives

The objectives of the study were as follows:

1. To ascertain the time devoted, type of trainers used, and contents of various topics in different subject areas and to compare these with what had been prescribed by the Government of India.
2. To assess by personal observation, quality of class room training from various points of view such as the physical conditions of class rooms, level of attendance, use of teaching aids, extent and nature of mutual discussion between trainers and trainees etc.
3. To assess the impact of class room training on the knowledge and understanding of the trainees in different subject areas of the curriculum.
4. To ascertain problems of PHC level training.

Study Areas

Uttar Pradesh, Maharashtra and Andhra Pradesh were selected for the study on the assumption that these States have rapidly implemented the multipurpose scheme. The PHC level class room training was studied in one district of each State, viz, Bulandshahar (Uttar Pradesh), Kolhapur (Maharashtra) and Hyderabad (Andhra Pradesh). The choice of district depended entirely upon PHC level class room training under way at the time of study. The number of PHCs actually observed in each district was as follows:

Bulandshahar	One
Hyderabad	Three
Kolhapur	Four

Method and Volume of Data Collection

This is described below:

- i. time tables of the PHC class room training courses at

Bulandshahar, Kolhapur and Hyderabad districts were studied in detail and compared with those prescribed by the Government of India;

- ii. observation study was made of 45 class room sessions using a structured schedule;
- iii. a set of 54 objective type questions in different areas of community health was administered to a total of 100 trainees before and 88 trainees after class room training; and
- iv. a total of 12 medical officers (MOs) of PHCs were interviewed regarding problems experienced in class room training.

Data Analysis

Time table data on topics, time devoted and category of trainers used, were compared with that prescribed by the Government of India.

Data of observed class room sessions were analyzed to obtain percentage ratings of good, fair or poor on the following aspects of quality of training.

- i. introduction to the topics;
- ii. Coverage, sequencing and summarization of subject matter;
- iii. Selection and use of teaching aids;
- iv. Presentation of the subject matter;
- v. involvement of participants and social climate; and
- vi. Evaluation of trainees understanding.

Also data on observed physical conditions in class rooms, level of attendance and languages used for instruction were summarized and percentages worked out, wherever appropriate.

Average pre- and post-test scores and differences

between them in various areas of community health, were tabulated and compared according to the category of field stall. Chi square and tests were applied, wherever found appropriate.

Study Findings and Discussion

Training strategy: In Bulandshahr district, the 15 day class room training prescribed by the Government of India for PHC staff under multipurpose scheme, was held at each of the 16 PHCs. The field staff was withdrawn in two batches for this purpose. The trainees were the MOs and paramedical supervisors at the PHCs.

In Hyderabad district the class room training was not held at the PHCs but was centralized at the Health and Family Welfare Training Centre (HFWTC). Fifty per cent of the PHC field staff was withdrawn at a time and trained simultaneously in three batches at the HFWTC by the staff of three selected PHCs. The total field staff of the district was, thus, covered in the course organized for six weeks or so.

In Kolhapur district, the Maharashtra State health authorities modified the multipurpose field staff training in three parts (Table 2).

The class room and practical field trainings had, thus, been combined into a single period of five weeks. The field staff serving the area covered by two sub-centers was withdrawn for each course and trained along with 20 Community Health Volunteers (CHVs) selected from their area. With ten

TABLE 2
FIELD STAFF TRAINING CONDUCTED IN KOLHAPUR DISTRICT

Training	Particulars	Weeks
1st Part	Combined class room and field demonstration	5 weeks
2nd Part	Trainees returned to PHC for services e.g. BCG, immunization and training of CHWs	4 weeks
3rd Part	Class room instruction and practical demonstration in medical care/first aid	4 weeks for workers and 7 weeks for supervisors

sub-centres to a PHC, the field staff of the entire district would, thus, be covered in five batches and take more than a year to complete.

Further, in Kolhapur district, three training teams had been organised to conduct the training as follows:

a. District Training Team

- i. Zonal Leprosy Officer, One senior Sanitary Inspector, One non-medical supervisor;
- ii. District Malaria Officer (non-medical), one nonmedical supervisor, one public health nurse.

b. Sub-team

Medical Officer, Sanitary Inspector, Malaria Officer and Nurse Midwife - one of each; and

c. Local Team

Medical Officer along with his PHC level Para-medical supervisory staff

The contribution of each training team in the form of lecture-sessions in the different parts of the training course was shown in Table 3.

TABLE 3

DETAILS OF LECTURE SESSIONS IN DIFFERENT PARTS OF THE TRAINING COURSE

Type of Training Team	1st Part Training Course	3rd Part Training Course
District Training Team	10 hours	10 hours
Sub Team	30 hours	30 hours
Local Team	6 hours	6 hours

The district training teams were located at district headquarter. They visited each one of the 16 PHCs for two days in both the first and third parts of each training course. The four sub-teams were located at selected PHCs. Each sub-team was meant for four PHCs and they visited them for five days in both the first and third parts of a training course. The local PHC teams were responsible for six hours of lectures in the first and third parts of a training course along with supervision of all field demonstration and practical clinic activities. They also actively supervised the trainees in the second part of the course when they returned to their posts for field services.

Training activities: The total training time and its distribution according to training activities in the class room courses at Bulandshahar and Hyderabad was as in Table 4.

It will be observed that the Bulandshahar course was longer and combined practical demonstration with class room theory in 34 hours i.e. 38 per cent of its total duration of 89 hours. The Hyderabad course was shorter, a total of 63 hours and practically all of it was devoted to class room theory.

TABLE 4
TOTAL TRAINING TIME AND ITS DISTRIBUTION

Bulandshahar		Hyderabad	
Registration and Inaugural Session	2 hours	Registration and Inaugural Session	2 hours 15 minutes
Lecture-discussion Session	45 hours	Lecture Session	44 hours
Lecture and practical demonstration	34 hours	Revision of topics	8 hours 45 minutes
Film	3 hours	Preparation of work plan	2 hours
Work Plan	2 hours	Film show	2 hours
Question answer session on work plan	3 hours	Baseline and mid course assessment of trainees	4 hours
Total	89 hours		63 hours

The Kolhapur course for reasons stated above could not be comparatively analysed with those of Bulandshahr and Hyderabad districts.

Time devoted to subject areas: In all the three courses time duration had been reduced in practically all areas with the exception of introduction to multipurpose scheme in Hyderabad, and environmental sanitation in Kolhapur. This was because of the fact that the original duration prescribed by Government of India was for a four-weeks course of class room instruction, whereas the study was conducted with this instruction taking place according to the revised schedule which had reduced class room instruction to 15 days. Maximum reduction of topics had taken place in the areas of health education, medical care, minor ailments, first-aid and management of obstetrical emergencies. In the subject areas of* family welfare and nutrition-deletion had been made mostly of topics considered to be of only theoretical interest to field staff such as programme goals, socio-economic impact of population growth, role of international agencies etc. In all three courses, however, the CHV scheme and leprosy and TB control programmes had been included although they were not prescribed by the Government of India.

Trainers need: The only Para-medical trainer identified by Government of India was the Block Extension Educator (BEE) for health education. All other topics were to be covered by MO, PHC, district level health officers or faculty of HFWTC covering the district. As compared to this, there was nil involvement of either the HFWTC or the district level staff in the class room course at Bulandshahar. At Hyderabad, faculty of HFWTC and non-medical district level health staff was used as trainers to a small extent. In Kolhapur, training teams had been constituted in order to divest district level health administration and HFWTC of any responsibilities in PHC staff training. In all the three courses, it was the MO/PHCs who were observed to play a major role as trainers, supported by Para-medical supervisors, and in a few instances by district level health staff.

Quality of class room training by observation study: So far as physical conditions are concerned, out of the eight class rooms actually observed in different PHCs of the study area, furniture for sitting purposes was adequate in all except one. The rooms were found to be spacious, well lighted

and ventilated. However, the size of two rooms was observed to be inadequate for the number of trainees attending, leading to considerable cramping and even a spillover into adjoining space outside the class.

The availability of facilities such as blackboard, chalk, charts and diagrams etc. was best at the HFWTC, Hyderabad. However, apart from blackboard and chalk, little teaching aids were available at the five PHC level class rooms actually observed. Text books for guidance of trainers had been distributed prior to the start of the course only in Kolhapur.

The number of trainees actually attending as compared with those supposed to be present was counted in 37 out of the total 45 observed class room sessions. Results were as shown in Table 5.

The level of attendance, therefore, was quite high and ranged from 70-100 per cent. Generally speaking, the attendance was found to be poor in the afternoon as compared to the morning sessions.

Trainers generally used the regional language, in addition to English in imparting instructions. However, at Hyderabad as many as 50 per cent of the sessions were in English. It was observed that wherever trainers asked the trainees as to which language they would prefer, majority invariably opted for the regional language.

TABLE 5
LEVEL OF CLASS ROOM ATTENDANCE OF TRAINEES

	Number of trainees attending class	Total number In the training batch	Percentage of attendance
Bulandshahar	28 (in 3 sessions) 29 (in 3session)	30 (in all 6 sessions)	93
Kolhapur sessions)	2 (in all 13 sessions)	2 (in all 13 sessions)	100
Hyderabad	507 (in 12 sessions)	611 (in all 12 sessions)	83

The quality of introduction to topic was assessed on the basis of as to whether the scope of the lecture was defined at the start of the session and also whether an attempt was made to relate the importance of the topic to past work experience of the trainees or their future job responsibilities. The results are shown in. Table 6.

It will be observed that as many as 16-17 sessions (40%) were rated poor, *i.e.* there were practically nil attempts to introduce the topic. Twenty three sessions (around 50%) were rated fair, *i.e.* cursory attempt was made in a few sentences to explain the topic's importance in rural health. Only five sessions (11%) were rated good.

Rating of sessions according to coverage, sequencing, and summarization of topics and category of trainer is shown in Table 7.

It will be observed that majority of sessions, 27 (60%), and 22 (49%) were rated good for coverage and sequencing of topic contents, respectively. It showed that trainers had taken some pains to collect and sequence material for the topic. However, summarization of the contents at the end of the sessions was fair or poor in majority of the sessions. It was actually nil in 13 (29%) sessions. The nature of the trainees was such that summarization of subject matter would not only help them to understand and remember but also to take note of points for future reference.

It will be further noted that medical officers were the most effective and the LHVs were the least effective trainers, though there being not much difference in the quality of performance between the other categories of trainers.

The use of teaching aids, *e.g.* charts, illustrations and drawings, photographs and slides etc. to make the trainees clearly conceptualize and understand the subject matter was rated in all the observed sessions. The findings are given in Table 8.

It will be noted that in 14 sessions (31%) the use of teaching aids was poor, and in as many as 12 sessions (26.6%) it was actually nil. Teaching aids were well used in only 8 (17.7%) out of the 45 sessions and all these were practically

TABLE 6

DISTRIBUTION OF OBSERVED SESSIONS ACCORDING TO QUALITY OF
INTRODUCTION TO
TOPIC AND CATEGORY OF TRAINER

Category of Trainer			Explanation of sessional objectives			Importance of topic			Total
			Good	Fair	Poor	Good	Fair	Poor	
Faculty	of HFWTC		1	-	-	1	-	-	1
District Staff	Level Health		-	5	-	1	2	2	5
MO PHC			2	10	7	2	11	6	19
BEEs			2	2	1	1	2	2	5
S.I.			-	5	4	-	5	4	9
L.H.V.			-	1	4	-	2	3	5
Total			5	23	16	5	22	17	44*

*Observation of one of the 45 observed sessions started late and introduction could not be assessed.

TABLE 7

DISTRIBUTION OF OBSERVED SESSIONS ACCORDING TO QUALITY OF CONTENTS
AND CATEGORY OF TRAINER

Category of Trainer	Quality of Contents										Total
	Coverage			Sequencing			Summarisation				
	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor	Nil	
Faculty HFWTC	1	-	-	1	-	-	-	1	-	-	1
District Level Health Staff	4	1	-	3	1	1	-	3	2	-	5
MO PHC	14	6	-	12	8	-	7	6	-	6	20
BEEs	3	2	-	2	2	1	-	1	-	4	5
Sanitary Inspector	4	5	-	3	6	-	-	4	4	1	9
L.H.V.	1	3	-	1	3	1	-	-	3	2	5
Total	27	17	1	22	20	3	7	15	9	13	45

held at the HFWTC level in Hyderabad. At PHC level class rooms, it was observed that some MOs,PHCs made a good attempt to substitute for lack of charts by showing pictures and diagrams from their textbooks of medicine and other subjects. Bearing in mind the type of trainees, only this lack of teaching aids detracted greatly from their ability to understand the subject matter being delivered.

The personality of the trainer (i.e. his/her level of confidence, resourcefulness and imagination) and the clarity and audibility of the lecture, were the two points used to rate the actual presentation. Results are given in Table 9.

The majority of the trainers showed confident personality and presented the subject matter clearly and audibly. This applied more or less equally to all categories of trainers. However, hardly any use was made of reinforcement methods.

The extent to which trainers actively involved participants by asking questions and promoted class room discussion, as well as the social climate particularly with regard to discipline were also assessed. The findings are given in Table 10.

TABLE 8
DISTRIBUTION OF OBSERVED SESSIONS ACCORDING TO QUALITY AND USE OF
TEACHING AIDS AND CATEGORY OF TRAINER

Category of Trainer	<u>Selection and use of teaching aids</u>				Total
	Good	Fair	Poor	Nil	
Faculty HFWTC	1	-	-	-	1
District Level Health Staff	1	3	1	-	5
MO PHC	3	5	8	4	20
BEEs	2	-	3	-	5
Sanitary Inspector	-	-	2	7	9
Lady Health Visitor	-	3	-	1	5
Total	8	11	14	12	45

TABLE 9
DISTRIBUTION OF OBSERVED SESSIONS ACCORDING TO QUALITY OF
PRESENTATION AND CATEGORY OF TRAINER

Category of	Quality of Presentation						Total
	Clarity	and audibility		Personality of trainer			
	Good	Fair	Poor	Good	Fair	Poor	
Faculty HFWTC	1	-	-	1	-	-	1
District Level							
Health Staff	2	3	-	4	1	-	5
MO PHC	13	6	1	12	7	1	20
BEE	3	1	1	3	2	-	5
Sanitary Inspector	8	-	1	4	4	1	9
L.H.V.	2	1	2	2	2	1	5
Total	29	11	5	26	16	3	45

TABLE 10
DISTRIBUTION OF OBSERVED SESSIONS ACCORDING TO LEVEL OF INVOLVEMENT
OF PARTICIPANTS, SOCIAL CLIMATE AND CATEGORY OF TRAINER

Category of Trainer	Involvement of participants			Social climate			Total
	Good	Fair	Poor	Good	Fair	Poor	
Faculty HFWTC	1	-	-	1	-	-	1
District Level Health							
Staff	1	2	2	-	5	-	5
MO PHC	5	10	5	15	2	3	20
BEEs	1	3	1	2	3	-	5
Sanitary Inspector	1	5	3	7	2	-	9
L.H.V.	1	-	4	1	4	-	5
Total	10	20	15	26	16	3	45

It will be observed that whereas the social climate judging from the point of view of discipline and keenness of students to learn was good or fair in majority of the observed sessions, however, active efforts on the part of trainers to respond to the situation and involve the participants by asking questions was not so good. In 15 (33.3%) out of 45 sessions, these efforts were very poor, nearly nil. This applied equally to all categories of trainers. To a large extent, of course, this was due to utter lack of teaching aids necessitating long descriptive deliveries on the part of trainers.

Poor social climate of noise, laughter and restlessness prevailed only in the session on Methods of Contraception. To avoid this, it might be desirable to separate trainees by sex for such topics.

Since the training was of field staff, it was of particular importance for the trainer to repeatedly assess as to whether whatever he had explained has been understood by the trainees by asking questions during and after the presentation. This aspect of the observed sessions was also rated. Results are given in Table 11.

TABLE 11

DISTRIBUTION OF OBSERVED SESSIONS ACCORDING TO QUALITY OF TRAINEE EVALUATION AND CATEGORY OF TRAINER

Category of Trainer	<u>Quality of Trainee Evaluation</u>				Total
	Good	Fair	Poor	Nil	
Faculty HFWTC	-	1	-	-	1
District Level Health Staff	-	-	2	3	5
MO PHC	-	7	3	10	20
BEEs	-	-	1	4	5
Sanitary Inspector	3	3	3	-	9
L.H.V.	-	-	2	3	5
Total	3	11	11	20	45

It will be observed that all categories of trainers made little to no attempts to assess whether they were being understood by the trainees. The only category of trainer which did so was the Sanitary Inspectors. This was done mainly by asking questions during or at the end of the session.

In none of the 45 sessions was there any distribution of background material for future reference, nor was there mention of books which the trainees could, lead for more knowledge on the topic being covered. A "Manual of Records and Returns of Multipurpose Health Workers" was the only handout distributed to field staff trainees at HFWTC, Hyderabad.

Impact of class room training on knowledge and understanding of the trainees: The average scores by category in different areas of community health, at the pre- and post-training tests are given in Table 12.

Taking the findings as a whole, it will be observed that the average pre training score was 55 per cent and the average post training score was 62 per cent. The pre- and post-test scores of only 54 trainees could be compared individually. This revealed a range of 37-85 per cent in the pre test scores and 53.7 to 100 per cent in the post-test scores. The total average difference in pre- and post-test scores was 9.2 per cent (significant, $t = 7.35$).

Further, it will be observed that amongst the field supervisors, it was the males which appeared to have profited most from the multipurpose training, their average post training score of 65 per cent was 12 per cent higher than the average pre training score of 53 per cent. On the other hand, the average post-training score of 66 per cent of MPHS (Female) was slightly lower than the pre training score of 69 per cent, which was the highest of all pre training scores. However, the total number of field supervisors being very small, it was not possible to apply statistical test of significance of these differences.

Fifty four trainees for whom individual pre- and post-training scores were available were practically all field workers. Their distribution according to differences between pre- and post-test scores is shown in Table 13.

It will be noted that there were 32 male workers with an average pre training score of 55.5 per cent and an average post-training score of 66.6 per cent. This difference of 11 per cent was found to be significant ($t = 7.69$). There were 17 female workers with an average pre training score of 64.8 per cent and an average post-training score of 67.7 per cent. This difference of 3 per cent was not found to be significant ($t = 1.12$). Again, the females did not appear to have profited much from the training.

TABLE 12

AVERAGE PRE AND POST-TRAINING ACHIEVEMENT SCORES* OF DIFFERENT CATEGORIES OF PHC FIELD STAFF, BULANDSHAHR, KOLHAPUR AND HYDERABAD DISTRICTS, UNDERGOING CLASS ROOM INSTRUCTION UNDER MULTIPURPOSE SCHEME - 1977-78

Area of Assessment	Category of Trainees								Total	
	MPHS Pre N=6	(M) MPHS Post N=6	(M) MPHWS Pre N=56	(M) MPHWS Post N=48	MPHS(F) Pre N=5	MPHS(F) Post N=7	MPHS(F) Pre N=31	MPHS(F) Post N=29	Post N=100	Post N=88
Maternal Health	2.7/10 27%	6.2 62%	3.8/10 38%	5.4 54%	5.7/10 57%	5.4 54%	5.4/10 54%	6.1 61%	4.3/10 43%	5.7 57%
Child Health	4.2/10 42%	5.5 55%	4.5/10 45%	5.7 57%	6.7/10 67%	7.0 70%	5.4/10 54%	5.5 55%	4.9/10 49%	5.7 57%
Basic Health Services/National Health Programme	2.0/4 50%	3.2 80%	2.6/4 65%	3.1 78%	2.7/4 67%	3.0 75%	2.4/4 60%	2.4 60%	2.5/4 62%	2.9 73%
Communicable Diseases/Health Intelligence	7.0/9 78%	7.2 80%	6.8/9 75%	6.8 76%	7.9/9 88%	7.2 80%	6.8/9 76%	6.8 76%	6.9/9 77%	6.9 77%
Nutrition	2.8/5 56%	2.8 56%	2.6/5 52%	2.7 54%	4.2/5 84%	3.6 72%	3.1/5 62%	3.1 62%	2.9/5 58%	2.9 58%
Health Education	0.8/1 80%	0.8 80%	0.6/1 60%	0.9 90%	0.9/1 90%	0.8 80%	0.7/1 70%	0.9 90%	0.7/1 70%	0.9 90%
Env. Sanitation	3.7/5 72%	3.3 66%	3.0/5 60%	2.9 58%	3.4/5 68%	2.8 56%	2.6/5 52%	3.4 68%	2.9/5 58%	3.1 62%
Total	28.8/54 53%	35.3 65%	28.7/54 53%	32.8 61%	37.1/54 69%	35.8 66%	30.2/54 56%	34.1 63%	29.8/54 55%	33.6 62%

*Varying denominators depend upon the total number of questions in each area; MPHS = Multipurpose Health Supervisor; MPHWS = Multipurpose Health Worker; Individual pre test scores -N-54; Means 57.4%; S.D.-5.9 Range 37% - 85% Individual Post test scores N-54; Means 66.6%; S.D.-3.6 Range 53.7% - 100% Average difference in Means - 9.2%; $t=7.35$ (Significant).

The average pre- and post-training scores, obtained by all trainees taken as a whole in different areas of community health, have been shown in Table 14.

It will be observed that communicable diseases and health education obtained the highest pre training scores followed by basic health services, nutrition and environmental sanitation. Maternal and child health and family planning received the lowest average pre training scores. The situation did not change much and the areas of maternal and child health and family planning continued to receive the lowest average post-training scores.

TABLE 13 FREQUENCY DISTRIBUTION OF DIFFERENCE OF PRE- AND POST- TEST SCORES

Difference in scores		Number of trainees		
-5				4
-2				2
0				4
+2				7
+5				16
+8				13
+11				2
+15 & 7				6
				54
Male Worker				
	<u>N</u>	<u>Mean</u>	<u>S.D.</u>	<u>Range</u>
Pre test	32	30 (55.5%)	4.49	(21-42)
Pos test	32	36 (66.6%)	3.34	(29-42)
Average		Difference = 11%	t = 7.69 (Significant)	
Female Worker				
Pre test	17	35.0 (64.8%)	5.82	(20-46)
Post test	17	36.6 (67.7%)	3.96	(31-54)
Average difference		=3%	t = 1.12 (Not significant)	

Conclusions

The study findings lead to the following conclusions:

1. Class room training of PHC field staff centralized at HFWTC was the best strategy. It has reduced the time factor because 50 per cent of the field staff, divided into as many batches as there were class rooms could be handled simultaneously. It provided good teaching aids, physical facilities including residential accommodation and help of HFWTC staff in preparation of time tables and lectures outlines etc. It reduced training efforts and made it uniform since MO/PHC divided the topics among themselves and took them for all batches. Also HFWTCs were located in a district headquarter towns, and the district level health staff could take part in the training. The only disadvantage was the large number of trainees in one class (40 to 60).
2. MO, PHC and district level health staff was found to be the most effective trainers. LHVs were the least effective.
3. Regional languages in addition to English were main media of instruction.

TABLE 14

RANK ORDER OF PRE AND POST TEST SCORES OBTAINED BY FIELD STAFF IN DIFFERENT AREAS OF COMMUNITY HEALTH

Area	Pre- test scores percentage	Post- test score percentage
Communicable diseases/		
Health Intelligence (2)	1	2
Health Education (1)	2	1
Basic Health Services/ National Health Programme (4)	3	3
Nutrition (5)	4	5
Environmental Sanitation (5)	4	4
Familv Welfare (10)	5	7
Child Health (10)	6	6
Maternal Health (10)	7	6

4. Levels of attendance were high (70 to 100%).
5. Social climate in the class room especially discipline was good, most trainers showed a confident personality, and their topic was well covered and sequenced. However, use of training methods to ensure participation and interest, *e.g.* introduction and summarization of subject matter, evaluation and reinforcement of training understanding, use of teaching aids etc. was 'poor to nil.
6. There was almost total absence of any handout or mention of reading references.
7. The need of male field staff for training was greater than that of females. Their average pre test score was 53 per cent as compared with 69 per cent for LHVs and 56 per cent for ANMs. Male staff also profited most from the training and their average post-test score of 65 per cent was significantly different from their pre test score. Female field staff did not profit as much from the training.
8. Amongst the different areas of community health, maternal and child health and family welfare received the lowest pre- and post-test score in male and female alike.
9. The major problems and difficulties expressed by MO, PHC regarding class room training of field staff were as follows:
 - i. considerable time gap between their own training at HFWTCs and their use as class room trainers;
 - ii. lack of support originally envisaged from faculty of HFWTC and district level health staff. This was so in phase I districts in which the HFWTCs were actually located - this problem would be more acute in phase II and phase III districts;
 - iii. transfer of trained MO, PHC resulting in field staff being trained with only one of the two posted MO, PHC oriented to the multipurpose scheme;
 - iv. lack of clearly defined procedures for stipend distribution resulting in great delay in its disbursement and financial hardship to the trainees; and
 - v. lack of teaching aids to facilitate explanation and description of subject matter to the trainees.

Suggestions

The strategy of field staff training, as recommended by the Government of India, in separate PHCs selected as training centers, may be altered, entirely at the discretion of State level authorities in favor of centralizing it at the HFWTCs covering a district, for the purpose of class room instruction only. This was found to reduce to a great extent the time and effort needed to organize this part of multipurpose training at least in Hyderabad district, Andhra Pradesh.

As far as possible class room trainers should be confined to district level officers and MO/PHCs. BEEs only with sanitary inspector qualification may be used for selected topics in the areas of health education and environmental sanitation. Use of LHVs should be avoided as far as possible.

Preparation of appropriate teaching aids, and their dissemination for the purpose of field staff training was a matter of great urgency. Their absence was greatly affecting the quality of class room training.

In order to provide the field staff undergoing multipurpose training with adequate reference material for future guidance, following steps are recommended preferably at the level of the Central Government in order to ensure uniformity:

- i. Preparation of standard lecture outlines or handouts on the topics prescribed for class room instruction under multipurpose scheme; or
- ii. Preparation of a standard list of simple textbooks covering the various subject areas of community health included in the curriculum of field staff training under multipurpose scheme.

Preparation of a set of objective type questions to evaluate knowledge and understanding of the trainees in different areas of community health which may be prepared preferably at the level of Central Government on an urgent basis. These may be translated into the various regional languages and distributed to all the multipurpose training centers. This would not only enable the trainers to imme-

diately assess the impact of their effort by pre- and post- training tests, but it would also ensure a certain level of uniformity of contents in the various subject areas of the prescribed curriculum.

As far as possible, the number of trainees in a class to be restricted to around 25

Trainees are segregated by sex for topics such as methods of contraception and human reproduction.

HFWTC and PHC level training to be closely coordinated so that MO/PHCs act as trainers within six months, or one year of their own training. Transfer of trained MO/PHCs is to be avoided as a matter of policy till they have fulfilled their role as field staff trainers.

Once sanction is obtained from State finance, the procedure for stipend disbursement to be sent in writing to HFWTC, district health authorities and MO/PHC by the State health directorates.

REFERENCE

SINGH, KARTAR *et al.* (1973) Report of the Committee on Multipurpose Workers under Health and Family Planning Programme, New Delhi, Government of India, Ministry of Health and Family Planning.

FERTILITY TRENDS AND CONTRACEPTION PRACTICES OF HOSPITAL PERSONNEL

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ABSTRACT

In a study of close IV hospital personnel, majority were in the age group of 30-49 years. The average number of living children was 4.2, while average number of conceptions was 4.7. The abortion and still birth rates per 1,000 conceptions were 38.9 and 22.9 respectively.

Most of the respondents knew about Nirodh while, half of them were aware of IUD and sterilization. Fifty-two per cent were using one or the other contraception techniques; single largest number was the users of Nirodh. A clear difference in the average number of living children was observed between those practicing terminal and nonterminal methods.

The value of this paper has in its importance that it deals with the fertility trends and conception practices of auxiliary personnel of a hospital. In a study of class IV hospital personnel,

Much emphasis has been laid on the role of hospital personnel in the national family welfare programme for motivating persons to adopt means for a small size family. This, however, largely depends on their own motivation and adoption of some suitable method of contraception by themselves. The present study of those working in Gandhi Memorial and associated hospitals attached to K.G.'s Medical College, Lucknow, has been, therefore, undertaken with the objectives to;

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- i. know the bio-social characteristics,
- ii. study the fertility trends,
- iii. assess the awareness of contraception techniques, and
- iv. find out the contraception practices.

Material and Method

From amongst the hospital personnel, a sample of one hundred class IV employees, who were target couples, was selected by random sampling. Due to various limitations, however, only 92 of these could be contacted and were included in the study population. These comprised of 32 (34.7%) ward boys, 32 (34.7%) sweepers, 18 (19.5%) *dais/ayas* and 10 (10.8%) peons. The data were collected by structured interviews and for recording the information a pretested interview schedule was used.

Observations and Discussion

The age of the husband in the study population ranged between 20-60 years; majority (73.9%) being in the age group of 30-49 years. The single largest group of wives (51.1%) was aged between 25-34 years (Table 1). In a survey conducted of railway employees earlier, it has been found that 63 per cent of the women are in this age group¹.

TABLE 1
AGE DISTRIBUTION OF RESPONDENTS AND THEIR SPOUSES

Husbands age (years)	Wives	Age (years)		Total	
	15-24	25-34	35-44	Number	Percentage
20-29	11	5	-	16	17.4
30-39	6	31	2	39	42.4
40-49	-	11	18	29	31.5
50-59	-	-	8	8	8.7
Total	17	47	28	92	100.0
Percentage	18.5	51.1	30.4		

The average number of living children was found to be 4.2 and this has not been much different from that of general population where this was assessed to be 4.05 by Gandotra and Das². Three respondents did not have any child; two of whom were recently married. About 16.3 per cent of respondents had no son, while 20.6 per cent did not have any female child (Table 2).

In the population studied, average marital span has been seven years and the average number of conceptions 4.7 (Table 3). The rate of abortion showed an increase with the lengthening of the duration of marriage. However, still birth rate decreased with the increase in marital span, but this trend was altered in those who were married for 16 years or more. The difference in the abortion and still birth rates of those with shorter (1-3 years) and longer (10-15 years) marital span was found statistically significant ($P > 0.05$).

According to Prasad's Social classification, a majority of respondents (60.8%) belonged to social class IV and none to social class I3. The average number of conceptions increased with the decrease in social class; this being 3.1 in social class II and III and 6.7 in those of social class IV. Similar were the observations in respect of living children, average being 2.9 in social class II and III and 5.6 in those of social class V. Child loss per 100 conceptions also showed an increase with the decrease in social class as no child loss was noted in those of social class II, while it was 14.9 in the respondents belonging to social class V (Table 4).

The desire for the male child was evident in all the respondents, though the number expected varied between one to three. None of them, however, preferred to have more than two daughters and the single largest group (29.3%) wanted to have two sons and one daughter. About 53.3 per cent respondents desired to have three or less children, while some and Sen. Gupta from their survey of Calcutta city reported that 86 per cent of the couples considered three children as enough⁴. The majority of the respondents (79.3%) favored a spacing of three-four years (Table 5).

Contraception: Contraceptive awareness of the study population was assessed and only those knowing the method

TABLE 2
RESPONDENT'S CHILDREN - THEIR NUMBER AND SEX

Son	Daughters							Total	
	None	One	Two	Three	Four	Five	Six	Number	Percentage
None	3	4	2	2	3	1	-	15	16.3
One	4	5	4	4	3	3	2	25	27.1
Two	6	10	7	5	2	2	1	23	35.8
Three	3	3	2	2	1	1	-	12	13.0
Four	1	-	-	-	-	-	-	6	6.5
Five	1	-	-	-	-	-	-	1	1.0
Total	19	26	15	13	9	7	3	92	100.0
Percentage	20.6	28.2	16.3	14.1	9.7	7.6	3.2		

TABLE 3
PRODUCT OF CONCEPTION IN RELATION TO DURATION OF MARRIAGE

Duration of marriage (years)	No. of conceptions	<u>Product of conception</u>			Abortion Rate per 1000 Conceptions	Still birth rate per 1000 conceptions
		Live birth	Abortion	Still birth		
1	57	53	1	3	17.5	52.6
1-3	75	71	2	2	26.6	26.6
4-9	136	131	5	2	36.7	14.7
10-15	103	97	5	1	48.5	9.7
16 and above	65	60	4	2	61.5	30.7
Total	436	409	17	10	38.9	22.9

TABLE 4
PRODUCT OF CONCEPTION IN RELATION TO SOCIAL CLASSIFICATION OF
RESPONDENTS

Social class	Number of respondents	Average number of conceptions	Average number of living children	Child loss per 1000 Conceptions
II	3	2.6	2.6	Nil
III	20	3.2	3.0	7.6
IV	56	4.9	4.4	9.7
V	13	6.7	5.6	14.9
Total	92	4.7	4.2	10.3

TABLE 5
OPINION ON SPACING AND NUMBER AND SEX OF CHILDREN DESIRED

Number and sex of children desired	Spacing (years)					Total		Number	Percentage
	Two	Three	Four	Five	More than five	Five	More than five		
2 males	-	5	3	1	-	9	9.7		
1 male + 1 female	3	7	3	-	-	13	14.1		
2 males + 1 female	2	12	10	3	-	27	29.3		
2 males + 2 females	-	6	4	3	1	13	14.1		
3 males + 1 female	-	6	7	2	2	17	18.4		
3 males + 2 females	-	3	7	1	2	13	14.1		
Total	5	39	34	9	5	92	100.0		
Percentage	5.4	42.3	36.9	9.7	5.4				

with its use as well as merits and demerits were considered having knowledge of the specific method. Most of the respondents (94.5%) knew about Nirodh, followed by sterilization (55.3%) and IUD (53.2%). Only 10.8 per cent of them were aware of oral pills and 4.3 per cent of contraceptive jelly. The knowledge of contraceptives was found lower in railway employees as 28.2 per cent of them had no knowledge and 56.3 per cent had inadequate knowledge¹. However, with the increase in the educational status of the respondents, the contraceptive awareness was also found to be increased and the number of children decreased (Table 6).

A majority (52.1%) of the respondents were using one or the other contraception technique at the time of this study (Table 7). Nirodh was used by 36.9 per cent, IUD by 6.5 per cent and oral pills by 5.4 per cent respondents. Of the three respondents who accepted sterilization, one adopted vasectomy and the remaining tubectomy. In a survey of Government employees by Central Health Education Bureau, 59 per cent were found practicing one or the other family planning method⁵. Nirodh was a popular method (50%) in this group followed by diaphragm and jelly (9%) and, IUD and sterilization (6% each). The contraceptive use has been sufficiently lower in the general population, where only 14 per cent of the couples currently used a method of birth control, of which 6 per cent had adopted a terminal method².

The average number of living children per user has been 3.3 in the present study and the sterilization was adopted only by those in whom the average number was 5. A clear difference was observed in the number of living children of the respondents practicing terminal and non-terminal methods as the average number of living children in these was found to be 5.0 and 3.2 respectively. Similar differences have been observed by Gandotra and Das where the average number of children ever born was found to be 4.75 and 3.98 for couples practicing terminal and non-terminal methods².

Conclusion

The observations of this study do not reveal much difference in the fertility trends and the contraception practices of the hospital personnel (class IV employees) with that of the general population. It is important to note that 46.7 per cent of the study population-preferred to have

TABLE 6
AWARENESS OF CONTRACEPTIVES AND AVERAGE NUMBER OF LIVING CHILDREN
IN RELATION TO EDUCATIONAL STATUS

Educational status	Number of respondents	Awareness of contraceptives					Average number of living children
		Nirodh	IUD	Pills	Jelly	Sterile-sation	
Just literate	31	27	10	1	-	10	5.0
Primary	26	25	15	1	-	15	4.8
Middle	18	18	13	2	1	12	3.5
High school	12	12	7	3	1	9	2.7
Intermediate	5	5	4	3	2	5	2.0
Total	92	87	49	10	4	51	
Percentage	100.0	94.5	53.2	10.8	4.3	55.3	4.2

TABLE 7
DETAILS OF CONTRACEPTION PRACTICES IN THE STUDY
POPULATION

Contra- ceptives	First choice		Current users		Average children	number of living of users
	Number	Percentage	Numbe	Percentage		
Pills	7	7.6	5	5.4		2.4
Nirodh	43	46.7	34	36.9		3.2
IUD	15	16.3	6	6.5		3.8
Sterili- sation	17	18.4	3	3.2		5.0
Total	92	100.0	48	52.1		3.3

more than three children. Also, many of the employees though eligible for accepting sterilization had not done so which is contrary to the popular belief that those working in the hospital are more enlightened about health, thereby making significant efforts to attain positive health and well being.

The potential of hospital personnel, if it is to be utilized for motivating others to adopt the norm of small size family, their own education and strengthening of the attitude to this end become a pre requisite. Planning of special educational and service programmes for this occupational group, therefore, assumes paramount importance which ultimately may lead them to extend a helping hand in the national family welfare programme.

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INFORMATIONAL AND DOCUMENTATION NEEDS FOR EDUCATION AND TRAINING FOR HEALTH AND FAMILY WELFARE - "PARA-PROFESSIONAL AND AUXILIARY"

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ABSTRACT

In this paper, the author stressed the needs for a central arrangement for acquisition, exchange and dissemination of scientific information in the field of health and family welfare so as to increase the efficiency and effectiveness of planning administration and evaluation of health and family planning programmes and also to carry out research when needed. The proposed arrangement in the form of a documentation centre must collect information on health care systems as their main functions so that the information and documentation needs for the education and training of health personnel are rationally developed in the context of present and future health needs and demands.

(Key-note paper presented at the National Workshop on Documentation in Health and Family Welfare organized by the National Institute of Health and Family Welfare, New Delhi in November, 1977.)

There is indeed an immense increase of medical knowledge and literature that, today, it is not possible for any individual to remain abreast with recent progress merely through one's own effort. There are other difficulties as well. The available data though at times plenty may not be easily retrievable lying scattered at several places. It is also collected differently creating doubts of relevance, reliability and validity. Therefore, some central arrangement for acquisition, exchange and dissemination of scientific information in our fields of activity was a necessary development

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to help increase our efficiency and effectiveness in planning, administration and evaluation of health and family planning programmes and to carry out research where needed. Therefore, the National Documentation Centre has been established at NIHFV to serve our information needs as well as of workers from other countries of the world.

National Concern for Health

Our basic health concerns are those connected with population dynamics, those arising from the spread of diseases and associated environment and those from the demand for medical care. Further, national objectives demand that health care services be available to all and sundry in the country irrespective of their capacity to pay for it or not and that these services be placed as close to the population as possible. To achieve these objectives, the services have been radiating to the people from three levels *i.e.* State, regional/divisional, and district levels including the block health centers and sub-centers. In this scheme of things many health programmes have been provided in our health care systems to solve given health problems such as (1) curative services, (2) malaria eradication, (3) control of other communicable diseases such as TB, Leprosy, filarial, VD, trachoma etc., (4) maternity and child health services, (5) family planning services, (6) school health, (7) environmental sanitation, (8) health education, and (9) other programmes.

It is well recognized that health manpower is an indispensable part of any health care system because its functioning depends on the number and quality of the health manpower employed. A documentation centre, therefore, must collect information on the health care systems as their main functions so that the informational and documentation needs for the education and training of health personnel are rationally developed in the context of present and future health needs and demands. Without such an information one cannot estimate the number and categories of personnel required and the standards to which they have to be trained to fulfill the roles assigned to them and their job responsibilities. The main functions of health care system are as follows:

Main Functions of Health Care System-¹

A. Provision of Health Services:

- i. health programmes;
- ii. Health activities;
- iii, health tasks; and
- iv. Technical steps in the performance of tasks.

B. Management of the system;

- i. management functions:
 - a. planning;
 - b. organizing; and
 - c. controlling - evaluation;
- ii. areas of management:
 - a. personnel;
 - b. financial;
 - c. supplies and logistics; and
 - d. others.

C. Other Functions:

- i. political;
- ii. Social;
- iii. economic;
- iv. Educational; and
- v. others.

The two main functions of the health care system, therefore, are providing health services and management. Some of the programmes of health services which are being provided have already been mentioned above. In addition, under each programme there are multiple activities and tasks etc. and all of these have relevance for the education and training of health personnel for which we need to document information. Further, we have other systems operating in the country such as indigenous systems and self-employed health workers whether professional, Para-professional or auxiliary in nature. The information about their roles, functions and activities will be of no less importance for this centre to collect and disseminate.

Of late, the organizational and management issues of health services programme have been assuming greater and greater importance as already depicted above which have implications for education and training of health and auxiliary personnel in management including continuing education. It is time that we may also collect information on these requirements as well and disseminate the same on request.

Informational and Documentation Needs for Education and Training

Basic data and sources of collection: This centre would need to collect some basic data to satisfy needs of our national concern for health. The areas to be covered for this purpose would be:

- a. *Population characteristics*
 - i. Demography - analysis of present situation and projections,
 - ii. Health needs and demands - morbidity, mortality, socio-economic data.
- b. *Health manpower*
 - i. Census of different health personnel such as doctors, nurses, health visitors, health assistants, sanitary inspectors, auxiliary nurse midwife, multipurpose workers, various categories of technicians working in hospitals and public health centers, personnel in dental care, pharmacists, physiotherapists, health personnel in the indigenous sector of medicine and homoeopathy, community health workers etc., and
 - ii. Utilization of health manpower - medical, public health, indigenous.
- c. *Education and training for health professions - doctors, nurses, others.*
- d. *Health care institutions*

- i. Facilities such as inpatient and outpatient services, specialist and investigative services, public health facilities such as primary health centers and sub-centers, environmental sanitation facilities, nursing homes, private clinics (including all systems),
 - ii. Staffing,
 - iii. Cost,
 - iv. Functional work study and analysis, and
 - v. Demand for health services, use patterns and utilization.
- e. *Health organisations (systems)*
- i. Components,
 - ii. Services,
 - iii. Functioning,
 - iv. Financing,
 - v. Economic analysis, and
 - vi. Manpower utilization.

Such a development can lead to the availability of information on current stock of various categories of health personnel and to estimate future needs -through time, series of planning and development.

Listing of various categories of Para-professionals and auxiliaries: Health manpower refers to persons who have received or are receiving, education and training for a specific occupation in the health care system². Because of considerable confusion in the classification of the health professions, the World Health Organization proposed a distribution of 29 categories of personnel broadly in three levels:

- i. high level, or professional, with a university degree;

- ii. Middle level, with 6-9 years general education and 1-3 years technical training; and
- iii. Basic level or health Aids who have only elementary in-service training.

This classification includes also practitioners of traditional medicine/midwifery.

Professional and Para-professional workers: Doctors, dental surgeons, nurses, health educators, medico-social workers, extension educators, occupational therapists' etc. are all categories of health workers possessing university degree and according to above mentioned definition would all come under the fully professional category. However, apart from doctors and dental surgeons who can function quite independently, most other categories even though fully trained (University degree) in most situations work in association with doctors. We can, thus, classify these workers into three categories:

- i. *Professionals:* doctors and dental surgeons.
- ii. *Para-professionals:* nurses, occupational therapists, health educators, medico-social workers, pharmacists, etc.
- iii. *Auxiliary health workers:* Laboratory technicians/ attendants, ANMs, health visitors, multipurpose workers, dais, community health workers, compounders, sanitary inspectors, etc.

However, the available data in the country is being listed as (1) medical, (2) Para-medical, (3) registered practitioners of Indian System of Medicine, and (4) homoeopaths³.

Basic educational qualification for entry in technical education: This information can be built up by obtaining information for each category of Para-professional and auxiliary health worker from the Indian and State Councils of Nursing, Pharmacy and State Medical Councils. For health educators and socio-medical workers etc. the information can be obtained from Medical Council of India, Universities and the Institutions imparting education and training for these

Degrees/diplomas/certificate programmes. Some information on these aspects can be obtained from the Central Bureau of Health Intelligence.

Information pertaining to education and training for each category: This information will have to be built in relation to courses offered, curriculum for each course, duration, where imparted, how imparted, financial aspects, graduation expectations and degree awarded.

Job description, roles and tasks: Some work has already been done in the country for developing the job descriptions of various categories of health workers in the country. The job descriptions of multipurpose health workers male/female and multipurpose health supervisors male/female, mass education and information officers and block extension educators are available in the report of the committee on multipurpose workers under health and family planning programme and subsequent reports of the Ministry of Health and Family Welfare. Job descriptions of medical officers in the PHCs, ANMs, basic health workers, computers, family planning assistants, sanitary inspectors/health inspectors'/assistants etc. are also available in the country and can be obtained from the Central Bureau of Health Intelligence, Rural Health Cell of the Directorate General of Health Services, or Malaria Eradication Directorate, etc. Recently, the job descriptions of community health worker and the 'traditional dai have also been framed and necessary manuals have been prepared for use to build necessary information. For other categories, the respective Indian Councils or State Medical Councils may have to be contacted.

Employment avenues; It would also be pertinent for the documentation centre to identify employment avenues for various categories of health workers in the country. This information necessarily will have to be built on several dimensions such as:

- 1 . Current supply and demand;
- 2 . Utilization;
- 3 . Loss; and
4. Career promotions.

Literature suited to different categories of workers

1. Textbooks;

2. Handbooks;
3. Manuals;
4. Guides;
5. Conference papers;
6. Government documents; and
7. Other documents.

This information again will have to be collected from various Councils in the country, universities, institutions imparting training, etc.

Scientific literature i.e. papers and research reports published in journals on any aspect pertaining to the activities of the Para-professionals and auxiliary health workers will have to be gone through.

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