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FEEDING AND MEDICAL CARE FOR 10,000 PRE-SCHOOL CHILDREN

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Malnutrition among pre-school children is being tackled on a national level and in this direction the Special Nutrition Programme of the Government of India has made a singal contribution. Under this Programme, the Government provides 18 paise daily for a nutrition supplement to pre-school children in tribal areas and urban slums. The Food Marketing Centre found that this is economically possible if large numbers are fed. To this has been added effective Under-Fives Clinics for as little as 5 paise per day per child under care. This paper discusses the administrative aspects of the nutrition programme and stresses on the importance of medical auxiliaries in running an Under-Fives' Clinic.

INTRODUCTION

Nutrition surveys among pre-school children, carried out all over India under the auspices of the Indian Council of Medical Research, have revealed a high incidence of protein calorie malnutrition (PCM), anaemia and vitamin A deficiency as some of the major problems among this vulnerable segment of the population (1-4). Recent clinical studies comparing malnourished with well nourished infants indicate that one of the immediate effects of early severe malnutrition may be an inability to process in-coming stimuli (5). Early severe malnutrition, therefore, affects learning and behaviour as well as brain size (6).

Nutrition deficiency is directly or indirectly responsible for high proportion of deaths under 5 years of age, excluding neonatal deaths. The deaths are principally due to the synergistic effects of malnutrition and infection (7). Malnutrition in children, as judged by low weight for age, is associated with a greater frequency and severity of infectious diseases in India (8).

Malnutrition amongst pre-school children is being tackled on a national level, and in this direction, the Special Nutrition Programme of the Government of India has made a signal contribution. Under this programme which is being administered through District Welfare Officers, the Government provides funds to distribute a supplementary meal to pre-school children and pregnant/lactating mothers in tribal areas and in slums of metropolitan cities. They are often glad to locate responsible voluntary agencies, capable of running this programme effectively. This was how the Food Marketing Centre, Xavier Institute, Jamshedpur, stepped into this programme. The Centre is now feeding 10,000 pre-school children daily in the slums of Jamshedpur.

The infrastructure which is built up to provide an effective delivery system to serve a hot cooked meal to each of the 10,000 children can

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be quite extensive. Providing an additional input of health care by means of an Under-Fives' Clinic through the existing network of services of the feeding programme and vice versa produces a multiplying, rather than a purely additive, effect on the health of these children. The Food Marketing Centre has devised methods to deliver the package of health care and nutrition to the pre-school child cheaply and simply.

ORGANISATION OF THE PROGRAMME

Overall Administration

Economy of scale is basic to the low-cost requirement of this programme. The central staff includes one Project Director, one Dietitian and four young graduate Field Supervisors. The Government allocation of 18 paise per day gives them a sum of Rs.1.800 daily for buying food and meeting administrative, transport and cooking costs. The central godowns are used to store bulk items with smaller store rooms attached to all cooking centres. A jeep with trailer is used as the main medium of transportation for distribution of food to the 13 cooking centres situated in slums.

Cooking Centre

There are thirteen cooking centres under the care of the field supervisors, each centre is staffed by 1 cook (salary Rs.70.00 per month) 2 helpers (salary Rs.20.00 per month) and one water carrier, wherever needed. One food carrier (salary Rs.30.00 per month) takes the food from the cooking centre to the feeding points. Each cooking centre cooks for about 1,000 children and is equipped with:-

1. One hanging pan balance for weighing food
2. Big wooden stirring spoons
3. Very large dekchis (24 inch diameter), each capable of holding 50 kg of cooked food, which can be served to 200 children.

The food is cooked over coal-fed mud chula such as the one used by local people. A small store containing ration and fuel for 6 days is situated near each cooking centre.

Feeding Point

There are fifty feeding points. Each feeding point catered from the cooking centre by rickshaw or handcart, feeds 200 children each morning and is staffed by one volunteer. On seeing the rickshaw coming, the children with their own plates converge from every direction, alone or brought by the mother or elder sister. After the first few months identity cards had to be issued in order to exclude children of school going age. Since then, house to house encouragement has been given to mothers to bring their youngest child for feeding.

The Food

Three menus are being rotated round the week, and one of them is "khichri". A typical mixture of khicheri for 200 children is:-

Rice	..	..	6.920 kg.
Masoor dal	..	..	4.610 kg.
Chana dal	..	..	4.036
Onion	..	..	0.576 kg.
Vanaspati	..	..	0.576 kg.
Masala	..	..	To taste

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This gives 83 gms of mixture per serving, containing about 300 calories and 12 gms of protein.

IMPACT OF THE SUPPLEMENTARY FEEDING

The children fed are mostly tribals, poor slum dwellers. A nutrition survey of these children showed that the incidence of protein calorie malnutrition was 52.7 per cent and that of vitamin A deficiency 25 per cent while anaemia affected half (9). This programme, like all supplementary programmes, runs the risk of becoming substitute meal for some children. However, the general impression of the workers in the programme is that severe malnutrition and vitamin A deficiency have been greatly reduced after one year of providing this single daily supplement.

THE UNDER-FIVES' CLINICS:

The Food Marketing Centre has opened an Under-Fives' Clinic recently. It is a mud-wall titled-roof clinic attached to the chulas of one of the cooking centres. This community-donated clinic is 12 x 15 feet and contains tables and chairs given by the community and one locable trunk for medicines. One register is kept for the names and numbers of new children. Parent retained child health weight records enable easy record keeping (10).

COST OF MEDICAL SERVICE:-

DPT, BCG, smallpox and typhoid vaccines are obtained free from Government. Polio vaccine is considered too expensive at present. Simple inexpensive medicines are dispensed and twice a week the doctor visits the clinic to see those children referred by the clinic worker. Simple standing orders such as those developed at Narangwal and Jammalamuddugu are being developed. Medicine costs are Rs.300 per month. Cost breakdowns so far show that expenditure will be about Rs.15 per pre-school child-in-the-area per year or easily within 5 paise per day per child.

ROLE OF INTERMEDIATE TECHNOLOGY:-

The concept of an appropriate technology for health care recognises that all countries are subject to limitations in their ability to provide health care. No country in the world makes available, all of the existing, most advanced medical techniques, to all of its citizens. Physicians are scarce almost everywhere and the cost of their training is soaring as biomedical knowledge expands. Maternal and child health care can be best, if not only, carried out close to or within the home environment of the woman and her child - that is mainly within the village. Medical auxiliaries can effectively fill the vacuum of health delivery care in developing countries (11). They do not replace doctors, but they may substitute for them in a simple Under-Fives' Clinic setting-weighing children, immunising them and advising mothers on nutrition education.

CHILD HEALTH WORKER CONCEPT:-

Child Health Worker (12) providing health care to under fives should be a female worker. She may be a school leaver awaiting marriage as in Jamshedpur, or a widow a in the Okhla programme, or a respected dai as in the Jamkhed (Maharashtra) programme. The child health worker can be taught for some hours each week or be given a 3 months full time course. In Jamshedpur, half of the course content is for nutrition, one quarter for pediatrics, and one quarter for elementary nursing skills. Choosing the child health worker from the same village eliminates the difficulties of appointing an outsider - the cost of renting or building accommodation, the problem of loneliness in a strange place far from

the nearest town and the difficulties of recruitment for remote localities.

The disadvantages mainly relate to the lower educational standard that might have to be accepted in recruiting girls from such localities. However local middle aged woman with leadership even though only of 4th or 5th standard education, can be trained to carry out repeated weighing of children, collection or children for immunisation, nutrition education, collection of birth and death information, advising on family planning, referrals of sick children and deworming programmes.

It should be noted that the Jamshedpur concept is quite different from the practice of Government which rents accommodation in the village and has a statewide system of transfers within the auxiliary nurse cadre. It is also different from the practice of Mission Hospitals to build expensive difficult-to-staff branch dispensaries. The practice of bringing in trained staff from outside the serviced area, as at present, does have serious cost complications, which the child health worker concept avoids.

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CAHP 205.

PANJEERI FOR MALNUTRITION.

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SUMMARY:

Panjeeri, a well known traditional Punjabi food for young children, can be made, packed and prescribed at reasonable cost for the treatment of malnutrition. It should be given along with repeated doses of advice and encouragement to the mother to feed more food to the child.

INTRODUCTION:

The Morley weight card in Ferozepur, Punjab allows grading of malnutrition in pre-school children into two grades of good nutrition and three grades of malnutrition (I° II° and III°) as laid down by the Nutrition Sub-committee of the Indian Academy of Paediatrics.

But having diagnosed malnutrition, the doctor or the auxiliary must be able to treat it. And because the cost to community and family of in-patient treatment is so great, some method of treating such a common condition is essential.

In protein calorie malnutrition ignorance and poverty both prevent the child getting enough to eat. By teaching the early use the cheapest foods, we try and overcome ignorance and lessen the effect of poverty on the child. Panjeeri is prescribed along with the teaching

as a food supplement
as a teaching device.

PANJEERI AS A FOOD SUPPLEMENT:

A supplement to treat protein calorie malnutrition should contain some extra protein, and enough calories to help prevent such protein being burnt for calories by the body. And it should be reasonably priced. A comparison with other products on the market shows that most of these concentrate on providing protein, and to have a long shelf life they are packed in expensive tins, thus only a small quantity is provided or the price is high. Panjeeri can be made by any hospital pharmacy or the by the nursing staff, and only enough need be made to last a week or so. Thus problems of weevils or expensive packaging are avoided.

COMPOSITION OF PANJEERI:

Table 1.

Wheat, or wheat flour (atta)	47 Gms.
Bengal grams kabuli channa	16 Gms.
Groundnuts mungphali	8 Gms.
Skim milk powder	8 Gms.
Unrefined brown sugar shakkar	16 Gms.
Cooking oil or clarified butter (Vanaspati or ghee)	5 Gms.
	100 Gms.

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This contains 14 Gms. of protein and supplies 405 Calories.

The above formula is similar to the 'Hyderabad mix' described by Reddy and other workers at the National Institute of Nutrition, Hyderabad and it so happens that this is quite similar to the food known in the North as panjeeri.

COMPARISON OF PANJEERI WITH OTHER FOOD SUPPLEMENTS.

Table 2 shows that panjeeri has few rivals as a source of low cost protein and no rivals if we consider it also a supplier of calories at low cost.

Table 2.

BRAND NAME.	RETAIL PRICE FOR 100 Gms IN RUPEES & PAISE.	COST PER 100 CALORIES IN PAISE.	COST PER GRAM OF PROTEIN SUPPLIED IN PAISE.
Panjeeri	0.41	10	3
Cow's milk	0.15	22	41/2
Casilan	2.88	80	3
Egg			6
Lactogen Milk powder	1.45	31	6 1/2
Trophex	2.86	66	7
Complan	2.60	53	8
Hepovite	5.28	Calories not given	10 1/2
Proteinules	4.71	Calories not given	10

Other brand names were either unavailable or did not supply information on calories or protein content, on the package. The high cost of packaging in tins accounts for some of the high cost of well known brand names.

PANJEERI AS A TEACHING DEVICE:

For teaching the mother.

We cannot rely on packaged food alone to prevent or treat malnutrition. Instead we tell the mother to:-

(a) feed solids from 4 months of age.
(b) use low cost readily available solids such as potato, kicheri, banana, dalia.
(c) double the food intake and the number of meals per day.
(d) enrich these solids by adding panjeeri to porridge laddu or paratha every day.
(e) bring the child regularly for reweighing, more panjeeri, and more feeding advice.

The mother can be taught and persuaded in conversation, by flash cards in groups or by feeding demonstration. Feeding the mal-nourished child on the spot proves to the mother that small babies can be fed solids. Also in giving panjeeri, we also include in the packet a pamphlet explaining to the mother how to prepare the panjeeri simply and cheaply in the home.

Each reweighing of the child should tell the mother if she is on the right track. She is congratulated if successful. If the weight has

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not improved much it usually means that she has not really accepted the teaching given. Panjeeri keeps her coming back enough times to eventually be convinced to 'feed more food'.

For teaching staff.

If nurses can be taught to make the panjeeri, they learn something practical of great value in treating one of the commonest diseases, and what they learn can be taught to the mothers whether they work in city or village after training. The doctor also, if Panjeeri is stocked in the pharmacy, or if the mothers know how to make it anyway, will always have a ready answer to a common prescribing problem, the problem of malnutrition. By studying the response on the weight chart, the doctor will see that the best results come when he has persuaded the mother to not only feed the child the panjeeri he prescribed, but when she also increases the quantity and frequency of the child's meals. The fact that he has something in his formulary that is logical and effective, will encourage the doctor to look out for malnutrition with an attitude of hope that will transfer itself to the mother.

PREPARATION AND PACKING.

I. Roast wheat, bengal grams and groundnut separately in a pan till brown.
II. Separately grind wheat, bengal grams and groundnut while still warm along with sugar in a home grinder and mix and add milk powder. (If soyabeans are used instead of milk powder, soak it for 24 hrs and dry in sun for three days and grind).
III. Pack and heat seal 70 gms of mixture into 250 gauge plastic bags of 3" width and pack 7 such bags into a larger stronger bag 11 cms x 27 cms of 350 gauge plastic along with explanatory pamphlet.

The net weight of a weeks supply of mixture is thus 490 gms. When the panjeeri is made by hospital staff in quantity, it is easier to use wheat flour than whole wheat. Groundnut can be bought roasted. Or roasting can be done in hospital kitchens without using any extra fuel.

COST OF MAKING PANJEERI.

Panjeeri as traditionally made in the Punjab contains almonds, but at much less cost groundnut can be substituted.

Table 3.

	Current rate per Kg. Rs.	Amount for 490 gms. (one week's supply)	Cost for (one week's supply)
Wheat or wheat flour	1.00	230 gms	Rs.0.23
Bengal gram	3.00	78 gms	Rs.0.24
Groundnut	4.00	39 gms	Rs.0.16
Skim milk powder	12.00	39 gms	Rs.0.47
Unrefined brown sugar	2.25	78 gms	Rs.0.17
Cooking oil or clarified butter	7.00	24 gms	Rs.0.17
Plastic bags for packing	11.50	10 gms	Rs.0.12
Explanatory pamphlet	15 per 1000	one	Rs.0.02
Roasting, grinding, packing, supervision & labour	1.00 per hour		Rs.0.25
Cost price			Rs.1.83
Selling price for calculation of comparative cost in Table 2			Rs.2.00

Soya bean can be used in place of skim milk if desired, with considerable saving of cost. If the panjeeri is made at home, whole wheat can be used instead of wheat flour with slight saving of cost and improvement of taste.

PRESCRIPTION: One small packet daily for infants; 1-2 teaspoons three times a day in milk or food from fourth month.

Two small packets daily for Antenatal women, in last fourth months of pregnancy; 4-6 teaspoons three time a day after food, and for two months after delivery.

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Further copies available from:

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PROTEIN CALORIE MALNUTRITION REDUCED BY A WEEKLY UNDER FIVES CLINIC.

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SUMMARY:

Of 142 clinic attenders out of 320 urban poor under-five year olds, the proportion with second or third degree malnutrition fell from one half to one third, when followed from first clinic visit for periods up to 20 months. These free clinics were held for one hour in each place weekly, and early and adequate feedings were stressed.

88% of parent retained child health records were recovered for inspection at the door, despite panic evacuation during all of December 1971 due to shelling of this border town. Costs and benefits are discussed. The main benefit is that once mothers are taught how to control malnutrition through feeding, they will not let it recur and mothers and health workers can focus on other health problems.

METHOD:

A weekly under fives clinic was started in two of Ferozepur City's poorest bastis, in May 1971. The team comprised a doctor, sister, health educator, laboratory technician, trained dai, and registration clerk cum dispenser cum driver. Medicines and vaccines and all services were provided free for one hour in each place, each week. Weights were recorded at each clinic visit on a Morley health record using a 25 Kg English Salter hanging scale. Home visits and feeding programmes were not part of the programme, but effort was made at each visit to encourage the mother to feed more food to her child, and to start solids from the fourth month. Most children were treated for anaemia, and this was treated with iron and folic acid. Illnesses were treated with a formulary of some 50 simple but effective medicines, and vaccines were given when illnesses allowed. Seven milk biscuits were given out each visit in cases of malnutrition.

RESULTS:

In February 1973, a house to house collection of patient retained child health records was made. The clinic was visited by half the children in the area. These came to the clinic 6 times on average but malnourished children came 9 times in 20 months.

TABLE 1: PRESENT NUTRITION STATUS OF ALL CHILDREN UNDER 5 FOUND IN SHEKHAN AND DIHARIAN BASTIS IN FEBRUARY-MARCH 1973.

	Attended clinic Health record recovered	Attended clinic record lost	Never attended	Don't know	Totals
Nutrition good better than 80% of Harvard standard	45	4	54	-	103(32%)
Malnutrition Grade 1.71-80% of Harvard standard	49	8	45	-	102(32%)
Grade 2.61-70% of Harvard standard	32	5	28	-	65(20%)
Grade 3.60% or less of Harvard Standard	14	2	7	-	23(7%)
Not at home, or refused to have weight taken or resented visits	2	0	25	-	27(8%)
No. of children	142(44%)	19 (6%)	159 (50%)	-	320(100%)

Statistical analysis of Table 1 shows no significant nutritional status - difference between previous clinic attenders and previous non-attenders in March 1973.

This table shows that half the children used the free weekly clinic some time during its first 20 months. And half of the serious or severe malnutritioned children used the clinic. At time of review 11.8% of cards issued were not produced on asking at the door, giving an 88% recovery rate in a very poor area. Many of these records were lost during December 1971 when due to shelling of the city, all women and children evacuated to the country side where they had to live in grass huts for 1 month. One in four of these children were still suffering from serious or severe malnutrition after 20 months of a free weekly under fives clinic service within a few hundred yards of their door.

TABLE 2: FINAL NUTRITION GRADE COMPARED WITH NUTRITION GRADE AT FIRST CLINIC VISIT.

Shekhan and Diharian bastis. Final nutrition grade as noted February-March 1973, First clinic visit occurred any time between May 71 and January 73.

Original nutrition grade at first clinic visit.	Final nutrition grades.					
	Nutrition good.	Malnut. Grade 1	Malnut. Grade 2	Malnut. Grade 3	Do not know.	Total
good.	30	7	0	0	0	37
Malnutrition Grade 1	8	23	2	1	0	34
Malnutrition Grade 2	2	17	23	4	0	46
Malnutrition Grade 3	4	2	8	9	0	23
Original grade unknown	-	-	-	-	2	2
Total number of children	44	49	33	14	2	142

Table 2 shows that there is a significant improvement from original to final (March 1973) nutrition grade in those who attended the weekly clinic ($X^2_{0.01(obs)} = 92.6$ for d.t.4) This is highly significant.

The most frequent nutrition grade in first clinic visits was 2nd degree malnutrition and at review the commonest grade was first degree malnutrition. Overall the figures showed a 22 in 71 reduction in moderately serious and very serious malnutrition (30.9% reduction in grades 2 and 3), among those attending the clinic.

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TABLE 3: CHANGE IN FINAL NUTRITION GRADE ACCORDING TO ORIGINAL NUTRITION GRADE IN CLINIC ATTENDERS:

Chekhan & Diharian Bastis Ferozepur City	Final Nutrition Grade. Better	Same	Worse	Do not know	Total
Nutrition good at first visit	-	30	7	0	37
Malnutrition Grade 1 at first visit	8	23	3	0	34
Malnutrition Grade 2 at first visit	19	23	4	0	45
Malnutrition Grade 3 at first visit	14	9	-	0	24
Original weight not known	-	-	-	2	2
No. of children	41	85	14	2	142

This table shows that of every 10 clinic attenders, 3 improved, 6 stayed the same and 1 worsened his nutrition status from first clinic visit to time of review.

TABLE 4: FINAL NUTRITION GRADE ACCORDING TO SEX:

	Final Nutrition Grade. Improved	Same	Worse	Do not know	Total
Males	17	42	8	1	68
Females	24	43	6	1	74
Total	41	85	14	2	142

This table shows that female children have responded as well as the male children to the health education and clinic services, and are just as likely to be brought for medical care as male children. There is no relationship between the sex and the attainment of final nutrition grade. The value of $x^2 = 1.23$ (d.f.2) is not significant.

TABLE 5: FINAL NUTRITION GRADE ACCORDING TO AGE WHEN FIRST SEEN.

Year of age when first seen	Improved	Same	Worse	Original weight not known	Total
1st	12	37	10	0	59
2nd	10	23	1	0	34
3rd	9	9	1	0	19
4th	6	10	2	0	18
5th	4	6	0	0	10
Age not known	0	0	0	2	2
Total	41	85	14	2	142

This table shows no relation between age when first seen and final nutrition grade.

The percentage improvements in nutritional grades in 1st to 5th year of life were 20.3%, 29.4%, 47.4%, 33.3% and 40.0% respectively for each year. In comparison for the improvements between two successive years, these differences are statistically insignificant (P ranging from 0.30 to 0.70). The difference between 1st year and 2 to 5 years taken together is also statistically insignificant (P=0.20).

COSTS & BENEFITS OF AN UNDER FIVES CLINIC IN REDUCING MALNUTRITION:

1. The Cost: What is the extra cost of giving a nutritional empha... to a weekly clinic? The cost of the health educator at Rs. 200 per mon... for 2 hours weekly for 20 months and the cost of 490 Gms of Panjeeri given six times to each child seen meant a cost of Rs. 44 per child actually improved in nutrition grade.

2. The benefits: This weekly under fives clinic working in these slum areas improved about one third of the children with second and third degree malnutrtition who were seen at the clinic.

3. Half of all the malnourished children in the area had been seen at the clinic. (Daily food would attract a much higher percentage, but even free food did not ensure a daily attendance of much over 60% even during the acute food scarcity in Maharashtra this year.)

4. Education of the Mothers by the Staff: Our experience was that the advice given to the mothers to feed their children was more important than the small food supplements given to encourage attendance among the ... ed children. Further attendance ensured more exposure to health educat...

5. Education of the Hospital Staff by the Community: The weekly clinic exposed the hospital staff to the severe malnutrition found only 4 Km fr... the hospital. As a result daily feeding centres have since been establi... and are running smoothly. Further results from this extension approach a... ...ow awaited with interest.

ACKNOWLEDGMENTS:

People in the U.K. provided the vehicle through Oxfam. People in New Zealand supplied milk biscuits through CORSO and the Ferozepur Municipal Committee gave most of the running expenses in the first year for these clinics. Punjab Government through Chief Medical Officer Ferozepur gave thousands of iron and folic tablets and B.C.G. vaccine.

Thanks are due to Mr. Rao, Holy Family Hospital, Delhi and Mr. Sadashivaiah of C.M.A.I. Family Planning Project, Bangalore for statistical analysis, and to all the clinic staff of Frances Newton Hospital, Ferozepur who worked hard to convince the mothers to feed more food.

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Health Planning - how planning begins with a study of deaths & diseases.

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When a hospital decides to analyse the diseases in the community, it often has to be content with hospital disease data to start with. This means that diseases which mostly result in death at home, such as child malnutrition, will be under-reported. However, if such things are allowed for, the results still show that the area round the hospital may not need a bigger and better hospital so much as scores of Sub-centres round the existing hospital.

The most reliable statistics will be from:
(1) Deaths. (2) In-patients. (3) Out-patients.

The only way to be sure that all records are actually included is to write out a list of all numbers or names wanted, one per line with a running "study number" in left hand margin and then have the charts stacked in that order for analysis so that any missing can be noted.

1. Analysis of Deaths: Death charts are naturally grouped by age & sex thus:

   (a) Still births plus first-week deaths (perinatal mortality) We study the mother's chart at the same time to deduce cause.

   (b) All other first year deaths upto 11 months.

   (c) All Toddler deaths 1-4 years.

   (d) 5-14 years male & female.

   (e) Women 15-44 (all pregnant, or upto 8 weeks post partum-maternal deaths)

   (f) Men 15-44 years.

   (g) Men & Women, 45 years and over.

   Each group is then analysed into preventability groups.

Perinatal Deaths

For the perinatal group the 'P' code of 100 causes given in the WHO 1965 revision of the International Classification of Diseases will be found more useful than the A code . Alternatively, the following are the main groups derived from the 'P' code.

1. Chronic maternal disease.
2. Toxaemias
3. Maternal Infections

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4. Difficult Labour

5. Antepartum Haemorrhages

6. Congenital

7. Infections of the baby

8. Immaturity or low birth weight, cause unknown.

9. Cause unknown, not immature.

10. All other known causes.

Some of Group 5 may be possibly prevented with folic acid before conception and low birth weight may be partly prevented by diet education for the women 40 kg or less in second half of pregnancy.

Deaths in under fives and older children.

The main 'preventability' groups are

1. Immunisable diseases (include measles)

2. Malnutrition - infection- anaemia - combinations including malnutrition-diairhoea.

3. Other faecal - borne disease in absence of malnutrition.

4. All other, including burns and accidents.

Then it can be decided which of these deaths could be prevented by a chain of under fives clinics in a 1 hour radius of the hospital, and what staff would be necessary for this and how to provide staff and financially support this. Then it can also be decided whether more deaths still could be prevented, if a village-recruited child health worker was put to work to cover every 3000 population, backed up by a weekly visit from the doctor with laboratory technician and trained nurse. The most easily preventable death group of all ages will be found to be the malnutrition and / or anemia and infection group in toddlers. This group responds to simple advice to feed more food and more solids.

All that is needed is a dedicated worker trained to persuade the mother, and equipped with a cup and spoon and some semi solid food to prove that the child can eat. The worker need not be highly educated provided she has leadership ability and social status.

Professor P.M. Shah of Bombay has refuced death and birth rates in villages, using illiterate social workers, job trained and periodically supervised, to concentrate on the malnutrition among toddlers. Much of malnutrition is due to ignorance of the importance of solid foods from 6 months of age.

Maternal deaths: The cause groups are

1. Haemorrhage and / or Anaemia. Antesartum or Post partum

2. Sepsis, post-partum or post abortal

3. Hypertensive diseases of pregnancy

4. Difficult Delivery

contd...page 3.

5. Other obstetrical causes.

6. Other non obstetrical causes

Then it can be decided

(a) which could be prevented by having a chain of antenatal clinics or workers in the district

(b) what other communications and transport is necessary to prevent most of the remaining deaths, and is it feasible at this stage?

Training programmes can then be aimed at the biggest and easiest "death targets" and the antenatal record and the antenatal clinic is geared to aim at selecting the high risk ones for hospital delivery.

Analysis of in-patients.

By taking the in-patient register and the main disease diagnosed in the last 100 patients, we may divide them into two groups.

(a) admission was avoidable if we had a subcentre within three miles of her home or had better out-patient facilities in the hospital.

(b) admission was unavoidable.

(Analysis done by hospitals (1973) in different states show that a third or a half of the admissions were thus avoidable.)

Analysis of out-patients.

Special study of every 10th outpatient can be made till 100 have been studied and they too can be studied as avoidable or unavoidable, if a subcentre had been near their home.

Also it may be studied how many miles they have come, and thus the intensive service area of the hospital can be worked out (of course the rich can afford to come longer distances.) Then it can be deduced that for maximum service to the public especially to the poor, the hospital needs village-recruited workers in a number of subcentres to serve the people who normally never reach the hospital early in the disease.

Diseases Tally Sheet (duplicated)

This has been designed to allow extra spaoe opposite the common diseases. The form may be kept on each doctors table. This is the 150 causes of disease and death of the 'A' list of the International Classification of Diseases, published by World Health Organization, as revised in 1965.

CONTD....page 4.

DIAGNOSTIC INDEX CARD (18.5 x 14 cm)

PURPOSE: This card records the unit numbers of patients suffering from each type of disease. From these disease statistics are easily compiled.

METHOD: These cards are kept only in medical records department.

Before the new year begins two sets of cards are prepared - one card for each disease; and one set for inpatient diseases; one set for out patient diseases.

Each disease has a code number taken from the International Classification of Disease (ICD) published by W.H.O. (available from any book-seller). The State Government may require the same coding for disease statistics - for example the 'A' code of 150 causes of morbidity and mortality.

All those patients with tetanus will be entered on the tetanus card. The unit number identifies each patient on this tetanus card. Patients who die have their numbers entered in red.

At the end of the month or year the number suffering from the disease is read off, using the running number on the edges of the card.

Each year fresh sets of cards are prepared. By keeping the annual sets, all patients records with a particular disease in the last 10 years can be easily studied.

Thus we can find out which villages, which age group, etc. suffer from certain diseases, and what the seasonal variation is. The reverse side of this card is the same as the front side.

Samples of these cards and of Disease Tally Sheet are available from Coordinating Agency for Health Planning.

Further copies available from:-

Coordinating Agency for Health Planning,
C-45, South Extension Part II,
New Delhi-110049.

ICD Code		IN Patient / OUT Patient	Diagnosis.....				Govt. Code
		Year	DIAGNOSTIC INDEX CARD				
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
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20							
	20	40	60	80	100	120	140

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CAHP-216. HEALTH EDUCATION - THE MISSING LINK IN MEDICAL CARE.

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Imagine that we are visiting a hospital and that when we ask these questions we are given the following answers:

Q. Who does surgery here? Do you have a qualified surgeon?
A. Surgery? Oh we all do surgery - everyone takes his turn with the knife, from the medical officer right down to the most junior attendent. Surgery is very important.

No, they do not have any special training, its just common sense really. Even the medical officer does not have much training because as a student he was not interested in surgery and so he did not bother to attend those classes. Yes, he does regret it a little now.

Q. Are you thinking of getting a qualified surgeon to come and give you a course on surgery?
A. Well we might do that sometime, but we are all so busy that it is difficult to find the time for it.
Q. What sort of results do you get?
A. Occasionally it works out alright, but some are very difficult cases. The body is very obstinate and ignorant and just does not know how to heal itself, or deliberately refuses to do so. So what can we do?
What would we think of a hospital where such a conversation could take place? It could not happen we say. And yet if we substitute "health education" for "surgery" we find that such a conversation could easily take place in very many hospitals. Why the difference in attitude? Which is more important?
Consider the major health problems which affect large numbers of people in India. Let us take a few examples:

Tuberculosis
Leprosy
Malnutrition in children
Diarrhoea in children
Infant mortality
Overpopulation.

Why are they problems? Is it because the medical solution is not known? Is it because medical services are not available? Or is it because the people do not use the services properly and do not follow the required behaviour at home?

A tuberculosis patient will take treatment until he feels better and then he will see no point in continuing; later he may become resistant to available drugs and a threat not only to himself but to the community. A leprosy patient may be afraid to come for treatment at all, or in the early stages may just not realise he has a serious disease. Malnutrition although largely due to poverty also could be much reduced if mothers appreciated the importance of giving their children more food; vitamin A deficiency could be easily prevented by giving greens with negligible cost. Diarrhoea could be prevented by better hygiene but villagers do not think this is important; when the child is dehydrated they believe in the power of mantrams alone and often do not seek medical care.

Infant mortality could be reduced by a better diet for pregnant women and more antenatal care, but village women do not see the need for this. Family planning services are available but they are not fully used.

So what is needed? It is to change people's behaviour, and this is difficult to do. We can say as in the conversation above that people are ignorant and obstinate so that nothing can be done. But this may be just a way of excusing our own faulty technique. There is a science of behaviour, and ways of bringing about change have been extensively studied.

Health education is not just giving talks and showing pictures. Would that be enough to change <u>your</u> behaviour? Nor is it only telling facts. Health education is based on the behavioural sciences - social psychology, sociology and anthropology. Insights obtained from studies in these fields can be applied to the problem of changing people's behaviour. Merely to hand out information by means of talks etc., is like handing out drugs without first making a diagnosis, and without relating the particular local symptoms to the physiology and pathology of the body as a whole.

The minds of the people to be educated are not just like blank pieces of paper on which we can write what we will. Their minds are more like an organ of the body which has certain fixed functions and whose structure and activities are all related to these functions. The "functions" depend on a person's goals and values. Therefore to change knowledge, attitudes or behaviour we must understand a person's goals and values and their system of beliefs. So the first principle of health education is:

1. <u>Know the culture.</u>

That is we must know the customs, beliefs, goals, values, and way of life of the people we are trying to educate. Their culture may be different from our own not only because of national, state, or regional differences,

but because of differences in class, caste, education, religion, and general background. There is usually a considerable cultural gap between say a doctor and a villager. Unless this is bridged in some way there will be little real communication, since communication depends on shared knowledge and attitudes.

The doctor may think he has explained everything, but it will not mean anything to the patient, and the doctor will, wrongly, conclude that the patient is stupid or obstinate. We cannot expect the patient himself to bridge this gap, we must go to meet him by learning about <u>his</u> ideas, before we can effectively teach him our own ideas.

2. <u>"Start from where they are."</u>

If we start with ideas that are quite unrelated to anything the patient already knows, then he will not be able to integrate what we are saying into his existing system of concepts and will probably reject it. We should try to introduce change gradually by building on what he has already. This takes us back to principle(1,)because clearly we cannot do this without knowing the culture.

3. Give people a learning experience.

Just giving information is usually not adequate to change behaviour. Doctors know all about the evidence that smoking causes lung cancer, but that does not stop them from smoking. A learning experience is much more effective. If the mother of a child with malnutrition sees her child improve with a better diet alone, she will be much more easily convinced than if someone merely tells her to give the child more food.

4. Motivate by linking the required behaviour with goals of groups and individuals.

The action which we want the person to take must be related to some goal the person has; the action should be seen as a way of reaching the goal. The goal may or may not be related to health. For example people may build a latrine because they think it will give them more prestige, or to imitate some important persons, and only afterwards they may discover its value for health.

5. Suggest specific, easily carried out behavioural changes.

Studies have shown that people are more likely to follow advice given if it is quite specific and precise, and they know exactly what to do. Also there should not be too many barriers making it difficult for them to do it. If we say to a mother, " you should have your child immunised", she may agree but do nothing about it; if we say the following she is more likely to come; "bring your child to the clinic tomorrow at 3 p.m. to be immunised; it is quite near your house and it will not cost you more than (a small amount); your neighbour is coming and you can go with her".

6. Work through leaders and use group influences.

Many studies have clearly shown the importance of group influence on a person's behaviour. A group discussion and decision is often more effective than a lecture. The social influence of the other members of the various groups to which people belong is very powerful. Reference groups, that is the groups with which people compare themselves also have an important influence.

Groups may often be influenced through their leaders. Leaders are people that others will listen to and imitate, they need not have any official position. They may be people who have more communication with others than the average, or they may be powerful because they have more resources than others, or more education. If we do not use them, they may work against the project and prevent any progress being made. If we can involve them and make them feel it is their own project, they are more likely to carry on with it even when we are not there.

7. Obtain participation of the community at all stages.

The community should be involved even in the planning stages of a project. Only if they are fully involved will they take a real interest in what is to be done. It has been said that we cannot give health to people, they must achieve it for themselves. We must act as catalysts and stimulate them to do this. One way is to form a health committee and get them to discuss their health problems and decide their own priorities and what help they want from us.

8. Meet felt needs first.

If people do not have enough to eat, e.g. no spare cash to buy food to-morrow and no prospect of work, they will not be very interested when we talk to them about long term preventive measures such as immunisation or family planning which may only help in the remote future. Health programmes and community development programmes should be much more closely linked so that felt needs can be met.

There is not enough space in this paper to describe the various theories on which health education is based. The above are just a few principles which will give some idea of the scope and methods of health education. Those who are interested and have time for further study can become familiar with the behavioural sciences, and themselves try out different ways of applying them; others can use the services of a qualified health educator.

In my opinion, only when health education becomes as important a subject in medical practice as for example surgery is at present, will many of the health problems of India be solved.

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GAHP 209.
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Nutrition Education - or Education in Child Care?

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The Planning Commission of the Government of India, in discussing the problem of malnutrition in its Approach to the Fifth Plan (January 1973), speaks of the need to integrate feeding programmes "with health care, immunisation and nutrition education to form a package". In the belief that the education component of the package would be better described as "Education in Child Care", this note sets out proposals for what this might mean; in particular for what might be:

I. eight basic universal messages
(i.e., messages generally applicable throughout India, in rural and urban situations);

II. in elaboration of these, twenty universal components of the packet of messages that need to be communicated to village women;

III. local modifications of some of these components, identified in list II by letters in parentheses.

The "messages" listed represent ideas, and some need more specific identification. They have been kept deliberately as few and as simple as possible. The ideas are not expressed in the terms which are supposed to be necessarily the most appropriate for getting them across. Once the ideas themselves have been agreed, this aspect - part of the "how" of communication - will need much thought. Probably the advice of those familiar with social customs and beliefs regarding illness, and with food habits and tabus, should be sought. Marked regional variation in these respects may mean that basically universal messages should be communicated in different ways in different parts of the country. Valuable assistance in these regards could be given by the Central Health Education Bureau.

The packet of messages or ideas represents "what every mother needs to know". Every father, too. But all village and block level workers with whom she comes in contact, including balsevikas, gram sevikas, mukhya sevikas, and also nurses. ANMs and PHC doctors, who will

/...

need training or at least "orientation" in the integrated package programme, should also be aware of, and sympathetic to, this packet, so that the messages will be reinforced at various levels and the mother will not be subjected to conflicting advice. In other words, all should speak with one voice. This means that the training given in on-going programmes, such as the Applied Nutrition Programme, needs to be reviewed with this packet of messages in mind.

Based on these messages a simple "Manual on Child Care, for village level workers", might be developed. Such a manual should be written in the local language with local modifications and adaptations of the messages. It should be complemented with a "Manual on Child Care, for Block/District level supervisors", and perhaps one for State level coordinators and training institution staff. Successive manuals, and training syllabi, should be developed from the bottom up, by seeking answers to questions such as: "Who will teach the mothers/ supervisors/teachers?" "What do they need to know in order to do this job properly?" However, implementation of the training should of course proceed from the top down. Throughout, as much emphasis should be placed on how messages should be communicated as on what these messages should be.

Child Care Education

I. Basic universal messages

1. Breast feed as long as possible
2. Introduce semi-solid food from 5 to 6 months
3. Feed young children 5 or 6 times a day
4. Don't reduce food in illness
5. Use the health services available
6. Get children immunized
7. Keep yourself and your surroundings clean; drink clean water
8. Have no more than 2 or 3 children, 2 to 3 years apart.

II. Universal components

1. Mother-to-be: (i) eat more than usual amount of cereal and pulse, and plenty of dark green and yellow vegetables and fruits; (A)
   (ii) visit PHC doctor/ANM during last three months of pregnancy.
2. New baby: (i) Mother's milk is best - don't discard colostrum;

/....

(ii) if you feed additional liquids, use a traditional feeding vessel, never a spoon

3. Keep on breast feeding as long as possible, but this is not sufficient by itself after the age of 5 to 6 months.

4. While breast feeding the child:

(i) mother should eat more than usual amount of cereal and pulse, and plenty of dark green and yellow vegetable and fruits; (A)

(ii) visit the doctor/ANM for check-up.

5. Start semi-solid food (local staple or mashed up ready-to-eat foods) after 5 to 6 months, and also undiluted cow's milk if you can. These foods must be prepared carefully. (B)

Give what you would normally give later, much earlier. And add vegetables and fruit.

6. As the child grows the amount and variety of foods should be increased. By the time he is one year old he should be fed similar foods to the rest of the family - cereal, pulses, green vegetables, perhaps supplemented by processed ready-to-eat foods - but in order to get as much as he needs he should be fed these solid foods 3 or 4 times a day. (A)

7. When you are unable to feed the child with your own milk, solid food (which may include supplementary ready-to-eat foods) should be given 5 or 6 times a day. Also, if possible, undiluted cow's or buffalo's milk or Miltone. (Miltone is 50 per cent milk and 50 per cent milk extender from vegetable sources.)

/....

8. Do not use excesive water for cooking rice and vegetables. If you drain the water after cooking do not discard it: it is good for you and should be consumed.

9. To prevent the child getting some diseases he should be immunised. This will probably make him a little ill, but will prevent him getting terrible scars later and perhaps dying.

10. To prevent him getting other diseases he should be kept clean and his surroundings & should be as clean as possible. Don't spit cough.

11. Do not let excreta lie around where your baby may be playing. Remove it quickly to a place outside his reach. After baby defaecates wash him clean with soap and wash your hands. Your child may get sick if he puts dirty hands in his mouth.

12. Hands should be washed before eating and before preparing food, and before holding and feeding the baby.

13. Kitchen and feeding utensils should be kept clean and not allowed to attract flies. Flies mean dirt means danger.

14. Food should be kept covered from flies and dust.

15. Only the safest available water should be drunk. A child needs plenty of water. (C)

16. Learn to recognise signs of common diseases: cough, diarrhoea - dehydration, fever, running ear, skin diseases, sore eyes and poor sight. Learn their management and how to deal with accidents in the home, and when to seek advice from ANM/doctor (D)

17. When the child is ill with fever or diarrhoea continue to feed him as before - but you may have to prepare the food more appetisingly. You may have to force him a little. He will get better quicker if he eats plenty of cereal, pulse, green vegetables.(A)

18. Encourage the child to play with simple household articles and things he can gather in the neighbourhood.

/...

19. Children cared for in this way are likely to be alert and curious and grow well. (E)

20. Children cared for in this way are likely to survive much better than those who are not. You may not then want so many children - family planning can show you how to achieve this, and and how to space those you do have by 2 or 3 years.

III. Some local modifications

(A) Give examples of particular cereals, pulses and vegetables, and methods of their preparation. If it is customary to eat animal foods such as eggs, meat or fish, and these can readily be obtained, they should be referred to.

(B) Give examples of suitable recipes from local foods.

(C) Source of this water to be discussed in detail.

(D) (i) If there are local schemes for the provision of Vitamin A capsules, or iron/folic acid tablets, explain how these can be obtained, and why.

(ii) If rickets is a problem (parts of central India?) explain importance of allowing child some exposure to sunlight.

(E) "Will grow well" - if the mother is likely to come in contact with a centre using health record/weight charts, these should be referred to and explained.

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Personal health care: the quest for a human right

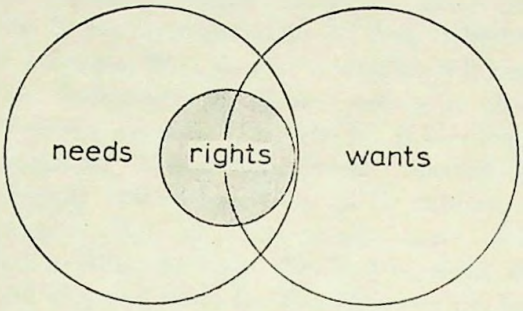
MAURICE KING

Nowhere do we fail more dismally to apply what we already know for the good of our fellows than in the provision of personal health care. It has been estimated that more than half the world's people have no access to the modern means of health care at all,[2] and this is in the Second Development Decade of the UN, in which health is being seen, not only as a means of development, but as one of its ends. Such is the human condition against which we search for a human right, our entire purpose for doing so being to see that no one shall be denied that right.

Personal health care is the help in sickness that one man can give to another by virtue of his special skill and knowledge. If a sick man lacks access to it, he is denied the possibility of being helped by any of a large number of medical interventions of varying complexity, cost, and benefit. *If we are to do anything useful to promote human rights in this field, we have eventually to specify in detail which of these interventions constitute this right.*

An intervention is merely a convenient name for one of the acts necessary to provide personal health care, be it injecting penicillin, administering polio vaccine, testing the urine, or even transplanting a kidney. Health care, and the interventions of which it is made up, can be simple or complex, expensive or cheap, and it is our task to try to determine what is the minimum quantity of it which all men everywhere have a right to enjoy. If this right could be defined in detail and generally agreed upon, we could observe it, handle it, cost it, and above all measure it, both in quantity and quality, and see who gets it and who does not. Perhaps, when we have done so, more people might enjoy it.

By adding 'rights' to 'wants' and 'needs' we make a difficult pair into an even more difficult trio. The right to personal health care can be considered as a group of interventions that an individual will only sometimes need, may not always want, which are not to be imposed on him, but which must be available. In view of the present circumstances of the developing countries, the interventions constituting this right can only be a part of the objectively assessed medical needs of a community. They are certainly not the same as its total wants, the relationship between the trio being conveniently expressed in the form of the diagram in Fig. 1.



Fig, 1. The relationship between rights, wants and needs.

Although we cannot, at this symposium, specify in detail exactly what human rights in personal health care shall be, we can, I think, go a useful distance towards deciding what they should look like, which will be at least something towards promoting their fulfilment.

THE ORDERING OF INTERVENTIONS

At its simplest, our human right in personal health care is but a group of the appropriate interventions taken from the totality of medicine. The question is: which group? In making our selection we need to consider both medical and economic criteria. In establishing the medical criteria we are assisted by the possibility of ranking interventions into some sort of order or technological scale.

That there is an order among interventions is well seen in clinical pathology, for example. Thus the simplest, cheapest, and almost the oldest test of all, and still one of the most useful, is to test the urine for protein. A little more demanding in equipment and skill is the measurement of haemoglobin. Slightly more expensive and difficult is the measurement of the blood sugar. Considerably more complex and costly again is the estimation of the protein-bound iodine in the blood. Towards the extreme in sophistication and expense come such procedures as radio immunoassay. Such differences enable interventions to be placed on a scale of increasing cost and complexity, in terms of both the equipment needed for them and the demands upon the operator who does them. The detailed relationships of such a scale are inevitably somewhat arbitrary and in practice the scale can only be partial. For example, it is difficult to know exactly where two closely similar tests, such as determinations of the blood urea and of the blood sugar, come in respect of one another. Nevertheless, a scale such as that shown on the left of Fig. 2 can be made out.

This scale has at least two significant features. The first is that if a particular hospital laboratory can do a certain test, it can usually do all the tests below it in the scale. If, for example, it can measure the haemoglobin, it can surely test the urine for protein. If it can measure the protein-bound iodine, it can certainly measure the blood sugar. Closely associated with this is the fact that, if a patient has access to a test at a particular point in the scale, he probably has access to all those below it. The second significant feature is that the position of a particular test on the scale has little relation to its diagnostic usefulness. Those higher up the scale are not necessarily any more use to the patient or to his doctor than those lower down.

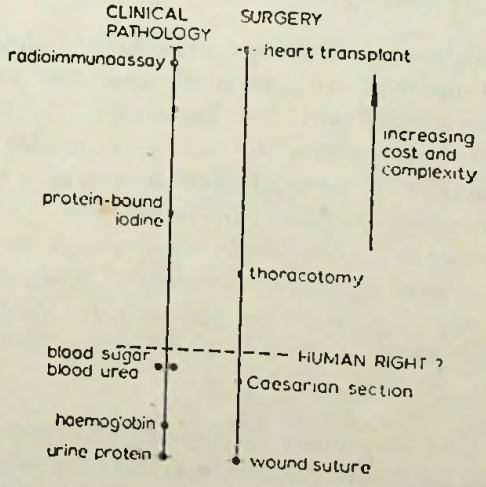


Fig. 2. An outline of the technological scales clinical pathology and surgery.

A similar hierarchical scale of interventions exists in surgery, from the simplest suturing of a wound at one end to the transplantation of a heart at the other, with such procedures as Caesarean section and thoracotomy coming somewhere in between. Here again, if a hospital can do a thoracotomy, it can certainly provide a Caesarean section. If a patient is in a position to get an operation higher up in the scale, he can probably also get all those lower down. Here too the benefit of a procedure may bear little relationship to its position in the scale.

Similar scales can be constructed in other specialities, such as radiology, or even internal medicine, and to some extent there is a correlation between them. For example, if a hospital is just able to provide a Caesarean section, it will certainly be able to measure the haemoglobin, but perhaps not the blood urea.

It is significant that these technological scales can be constructed in terms of what health units in developing countries are capable of doing, and that they are susceptible to exact measurement. They are also some measure of the way in which these health units appear to grow, in that they are apt to add on more complex procedures and so move up the scale. Even in units showing a very great imbalance, between, say, excessive surgery and no child welfare, their development within specialities is likely to follow such a scale.

If such an approach is valid it may help us to define human rights in health care. Perhaps there is a 'threshold' somewhere on these scales below which everything might be included as a human right?

But, before going further, more must be said about benefit. Needless to say, a scale on which benefit was ranked would look completely different. But, alas, it is, economically speaking, quite impractical to define human rights either entirely or even largely in terms of benefit. However, benefit is an important aspect to consider at the 'threshold' point on the technological scale. Here it would be useful to consider some 'trade-off' between cost and benefit which would allow some particularly beneficial procedures just above the human rights threshold to be included, while some of those of lesser benefit just below it were excluded. In practice, however, such a re-ordering of the scale might be overshadowed by two further peculiarities of the various interventions—their clustering, and the disjunctions between them.

THE CLUSTERING OF INTERVENTIONS

Many medical interventions are closely clustered or associated in the sense that if one is available, another can be provided at little or no extra cost. Thus, if a laboratory can examine a thick blood film for malaria, it can examine the stools for amoebae at no further expense. If children are already being weighed, it is hardly more expensive to chart their weights. The provision of a health centre makes it possible to supply a large cluster of interventions, and a district hospital another cluster.

The definition of a human right in personal health care must take into account this way in which interventions naturally associate together. As shown in Fig. 3, the 'right' should try to include a cluster rather than

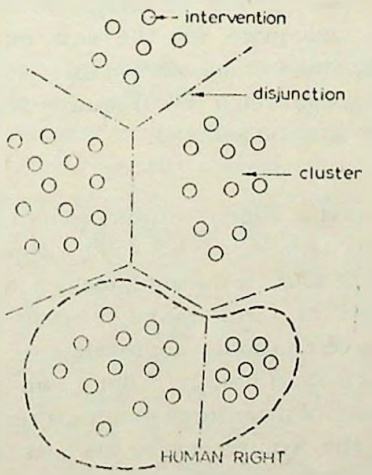


Fig. 3. The clustering of interventions and the disjunctions between them.

cut across it. Such clustering means that there is not much point in deciding whether, for example, BCG vaccine should be a human right independently of the means to chart children's weights, with which it is so closely associated. If these are already charted, the marginal cost of providing BCG vaccine is not great. One of the most significant associations is that between the interventions for child care and those for family planning, the former providing a most useful vehicle for the latter.

THE DISJUNCTIONS BETWEEN GROUPS OF INTERVENTIONS

As a natural corollary of clustering there are wide gaps or disjunctions between some groups of interventions. Take, for example, the treatment of dehydrated children. It is possible to provide in a mere 20 pages of basic English a complete account of how to treat dehydrated children, including some elementary physiology and rules of thumb treatment, such that 95% of them can be cured at little cost. To improve on these figures requires a level of knowledge and an expenditure of at least an order of magnitude greater. For example, an understanding of milli-equivalents is required, together with an Astrup machine. There is thus a clear disjunction or gap between a group of simple interventions that are adequate for the vast majority of children, and a much more costly and sophisticated group which are required if a higher cure rate is to be achived.

There is a similar disjunction in the field of clinical pathology. US $500 will provide a microscope and all the equipment and materials needed for a wide range of simple but very useful investigations, appropriate to a health centre or district hospital.[4] But a sum of money of an order of magnitude greater is required to provide the equipment for the next methods up the technological scale, including such items as an autoclave and a flame photometer.

It is through disjunctions, or natural planes of cleavage between groups of interventions, that we must define human rights in personal health care. Thus the simpler group of procedures described here for the treatment of dehydration and the simpler set of laboratory methods have good grounds for being considered as a universal human right.

'GOOD MEDICINE' IS MORE THAN A LIST OF INTERVENTIONS

A list of interventions, however carefully chosen, can only provide the barest framework for medicine. It might specify, for example, that a health worker should be able to examine the ear and recognize certain abnormalities in it, or that he should be able to teach a mother how to express her breast milk. But many small details are also important, such as when during the examination of a child is the best time to examine his ear, and how he should be held while this is being done, or whether a mother is *shown* how to express her breast milk, or merely told how to do so. These small details, even kindness, are no less a human right than the intervention itself. Something else has thus to fill in the detail round the skeleton provided by a bare list of interventions. Although a detailed pattern of practice stems from the whole tradition and ethos under which health workers are trained, it is most easily handled if it is carefully defined in manuals that are written round the interventions and so serve to fill them out in detail. Ideally such manuals should embody a pattern or system of practice that should be widely accepted as 'good medicine' under the particular circumstances for which they are written—a problem to which I shall return.

PACKAGING THE INTERVENTIONS WHICH FORM THE RIGHT

Having proceeded so far we find ourselves with a wide assortment of simple and comparatively cheap interventions in the various fields of medicine which confer great benefit at little cost, and at least deserve consideration as human rights. But lists of interven-

tions by themselves are of comparatively little use to a health service, even if they are filled out in manuals. If human rights are to be realized by the provision of services, they have to be developed in a form which encourages health services to implement them. Some wider concept and more effective health service 'tool' is needed, and it is useful to think in terms of 'health care packages'.[5]

From the point of view of the health services a 'package' is much more than merely a careful collection of interventions. It also contains every thing technically necessary to promote their application. Critically important is a detailed set of behaviourally defined educational objectives for the staff applying a package. These objectives embody the interventions for training purposes, and are in practice the most convenient way of listing them. Other necessary items, besides manuals, are teaching aids, curricula, equipment lists and ways of recording and reporting, together with methods of evaluating both the knowledge of trainees and the quality of the services they provide. A package should also contain methods of supervising the workers applying it, and of introducing it on a service scale. Norms are needed for costs and output per worker. Some measure of its epidemiological impact is also required, where this is observable. The items in this heterogeneous list are conveniently called 'components', and all relate in some way to the particular group of interventions forming a package. A health care package can thus be defined as an *integrated set of components assisting the application of a particular group of interventions for the improvement of health care under specific socioeconomic conditions.*

'Health care packages' are becoming fashionable and mean different things to different people. Very often they are taken to mean merely a particular mix of services, such as a certain combination of child care and family planning, and the idea of several integrated components serving a selected set of interventions is lacking.

The real purpose of a package stems from the postulate that, although individual components are useful by themselves, their combined effect is likely to be more than merely additive. Thus a kit of laboratory equipment or a manual is little use alone, but integrated with one another and used together they may be very valuable. Great emphasis is placed on the components being complete and integrated. Thus, if a particular item of equipment is described in a manual, it has got to be in a government's medical stores list. The components have also to be complete, in the sense that a child care manual has to specify all the knowledge that a worker requires in this field.

This is not the place to go much further into packages from the point of view of the health services, except to say that their boundaries are largely a matter of administrative convenience and that it is at the bottom of the scale that they promise to be so useful, because it is here that such a vast quantity of services are required. This is also where well-designed packages can in some measure augment scarce technical, administrative and educational skills, and help to make up for limited opportunities for communication. Higher up the technological scale these constraints are so much less severe that packages lose their point. One of the great opportunities of a package is that it enables great attention to be concentrated on the many small details upon which successful health care ultimately depends—an attention which they seldom get. Packages promise to be useful administrative and educational tools that can save hard-pressed administrators and teachers much trouble. They also throw into sharp relief the technical deficiencies which now so greatly hinder services. For example, one such deficiency that has come to light in the attempt to put together a child care package is that there is still no account in English of how a medical auxiliary should examine a child.

Thus 'packages' have the unique advantage they that are at the same time both an exact way of defining rights in personal health care, and a valuable administrative tool for implementing them.

FIG. 4

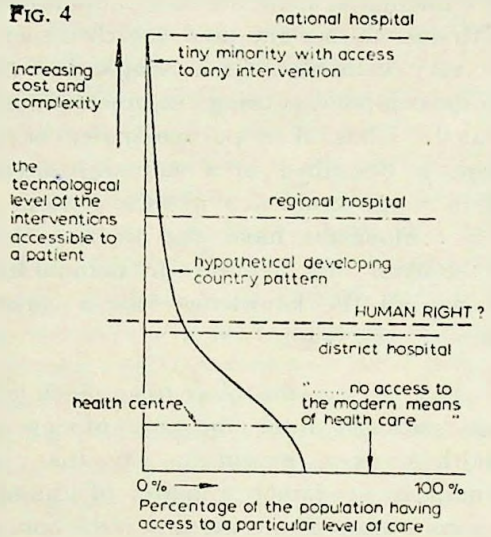


Fig. 4. The access of the population in a developing country to different technological levels of health care.

WHICH PACKAGES MIGHT BE CONSIDERED A HUMAN RIGHT?

We are now in a position to consider which group of packages might be practically attainable as a human right. In view of the extreme economic constraints of so many countries, packages for the delivery of outpatient rather than in-patient care deserve priority, some of the cheapest and most effective interventions being those for the prevention or treatment of infectious disease. Human rights in maternal and child health should come high on the list. A very strong case can also be made out for the provision of simple operating facilities, and such surgical interventions as should be within the capacity of a general duty medical officer, especially those required for trauma and operative obstetrics. Much progress towards the development of such a surgical package has indeed already been made. The technical quality of medicine at this level is greatly increased by the provision of simple laboratory methods, and of surgery by the availability of blood transfusion.

WHO IS GETTING HIS RIGHT AND WHO IS NOT?

Fig. 4 is a graph in which the ordinate is a composite scale derived from the scales in Fig. 2, and represents the cost and complexity of the interventions available to a patient. The abscissa is the percentage of the population enjoying care at a particular level. If we assume that a patient having access to a certain intervention also has access to the interventions below it in the scale, then it is possible to show the care provided by different types of health unit, and that enjoyed by societies with different health care patterns. Fig. 4 shows the technological levels of care ideally provided by health centres and by district, regional and national hospitalts. It also shows the hypothetical pattern for a developing country where a small elite have access to almost any intervention, if necessary by going abroad for it, while more than half the population have no access to the modern means of health care at all.

Fig. 5 shows what the graph would look like for two hypothetical countries with highly

FIG. 5

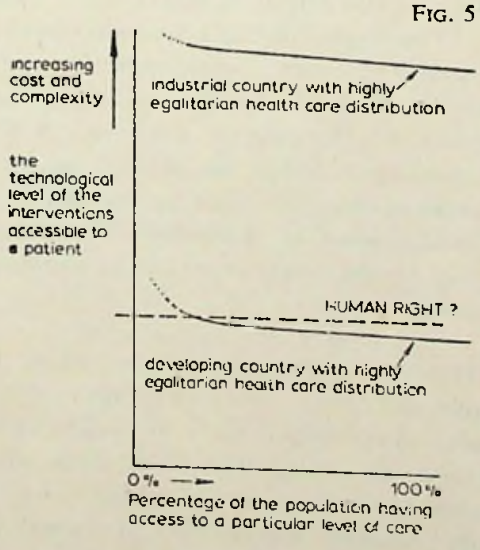


Fig. 5. Two egalitarian patterns of distribution of health care.

egalitarian health care patterns, one industrial and the other developing, and also where the human right might come on such a graph.

FIG. 6

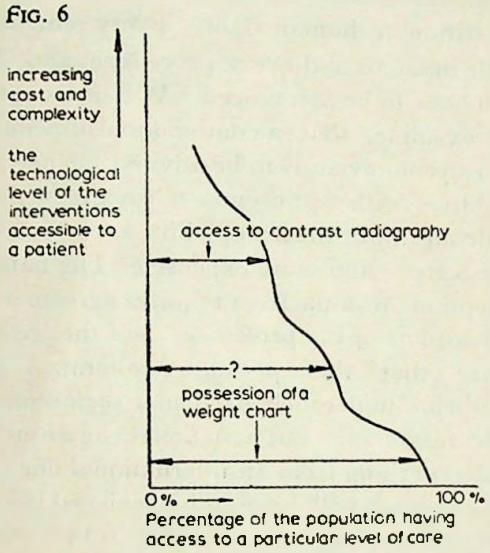


Fig. 6. The use of indices to measure the profile of access to health care.

If a graph of this kind is to be useful it has to be obtainable by observation, and for this indices or markers are required at the varying technological levels, as shown in Fig.6 —the lower levels being of particular interest for a definition of human rights. One of the advantages of defining these rights in terms of packages is that, if they contain suitable tracers or markers, it should be comparatively easy to know who is enjoying them and who is not. In child care, for example, the possession of a weight chart is an ideal marker, and all the less-privileged children in developing countries need one. If the issue of a weight chart forms part of a mother and child health package, then its possession by a child is good evidence that he has access to the rest of the package, should he need it. Data on who possesses a weight card could readily be obtained during a census.

Other markers will be required for packages defining ambulatory adult care, and for inpatient services at the level of the district hospital. It would also be useful to have markers at other points on the technological scale beyond those which it is realistic at present to consider as possible human rights. For example, access to contrast radiography promises to provide a useful marker for comparatively sophisticated services. Patients are referred for it from a wide range of specialist departments, and if the distribution of income among the people getting this investigation matched that of the population as a whole, it could be assumed that all sections of the population had equal access to a wide variety of sophisticated interventions. The neccessary data would not seem unduly difficult to obtain.

Fig. 7 shows the directions in which politicians and the major political factions within medicine would like to see money spent, the tension between them being particulary acute in the developing countries. In many countries the large, conservative, hospital-based, technologically preoccupied group seek to spend the money on raising the peak level of care for the privileged. The smaller, socially committed and more community-oriented minority would like to see it spent to enable more people to attain a minimum level of care, and thus obtain their human rights.

FIG. 7

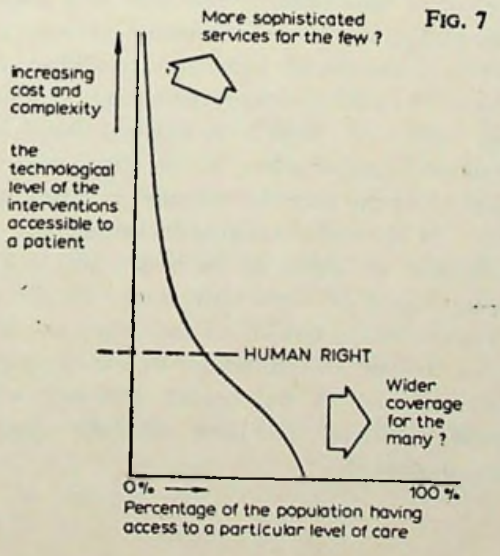


Fig. 7. The tensions over priorities for development of health services.

RIGHTS IN RESPECT OF QUALITY

In personal health care 'quality' is at least as important as 'quantity'. Few things are more difficult to measure but is probably easiest to measure the comparatively simple services with which we are concerned. If the way things should be done is completely specified, and a pattern of 'good medicine' defined as part of a package, the care provided is much more susceptible to observation in the interests of quality control. If, for example, a package requires that dehydrated children be rehydrated in a clinic with an oral rehydration set, then the presence or absence of such a set is a measure of the quality of this particular intervention. If the package requires an auriscope which works, its presence in a working condition is another measure of quality. Other and more important indicators of the quality of care are how many days a week a clinic is open, and whether the growth of all children is monitored on a chart. The use of an objective, weighted quality score promises to make it possible to arrive at a very useful indication of the quality of care given by a particular clinic. It must, however, be closely related to what is practicable, be decided on with the participation of the health workers, and be used more as a 'team game' than a threat of sanctions. The level of a worker's knowledge also provides another oblique indication of the quality of his services. Thus, if the objective examinations forming part of a package show a health worker to have little understanding of what he is about, then the quality of the care he provides is likely to be low. If his understanding is better, his performance is likely to be better also. Even though none of these indicators are absolute measures of the quality of care, they are all in some degree an estimate of it. In aggregate they promise to be useful, but only where 'good medicine' has been carefully specified and packaged.

FROM PACKAGES TO RIGHTS

One of the first steps is the national recognition by the medical profession of the technical quality of the Packages that might constitute a human right. Every sentence in their manuals and every procedure and drug will have to be scrutinized. Will it be agreed, for example, that a combination of penicillin and streptomycin is to be advised for newborn children with septicaemia when every paediatrician thinks that ampicillin and cloxacillin are better—and more expensive? The national adoption of a package requires agreement by the leaders of the profession and the government that the package epitomizes good medicine' under their particular socioeconomic circumstances. But a national consensus is a different thing from an international one, and this is what will have to be achieved if a useful definition of human rights is ever to be widely accepted. Here we are up against the great cultural variations between different national patterns of medicine, and any agreed system of even elementary medicine will be difficult to reach. As a result, sponsorship and promotion by the appropriate international organizations will not be achieved lightly. Perhaps the continued experience of a number of countries with closely related packages will pave the way for the subsequent international recognition of those representing human rights in personal health care. It seems likely that we shall have to proceed from packages to rights, and not *vice versa*, because it is only as packages that rights can be manipulated. In ten years' time it will be good to hear a director of medical services say that his clinics employ the 'Human Rights Child Care Packages, Mark VII' and that 97% of the children in his country have access to it.