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NEONATOLOGY IN THE UNDERGRADUATE MEDICAL EDUCATION

Current Status

I. Narayanan
O.N. Bhakoo

ABSTRACT

This paper presents the current status of neonatal teaching in the undergraduate medical education in 50 medical colleges. There appears to be a lack of uniformity in the various institutions not only in basic facilities for neonatal care but also in the course content and periods of the teaching programmes. Objectives of neonatal training have been defined and a broad outline for education provided. It is suggested that an optimal programme be drawn up and presented through the Medical Council of India for implementation by the different Institutions.

Key words: *Neonatal education, Undergraduate Medical education.*

The importance of making undergraduate medical education more need-oriented to the current health requirements of the country is being increasingly accepted. Basic MCH care is a top consideration and care of the newborn a high priority. Since neonatal mortality constitutes approximately 50% of the high infant mortality(1), it is essential that the basic doctor is equipped with the relevant knowledge, skills and attitudes to provide at least minimal care for this crucial period. This study was undertaken by the National Neonatology Forum in order to identify the current status of neonatal care in the teaching curriculum of the various medical colleges with a view to define an optimal course content and methodology which could form the basis for an improved, need-oriented and more uniform policy.

Material and Methods

A questionnaire on the subject was sent to 100 medical colleges. Replies were obtained from 50 institutions. The salient features are noted below.

Results

Among all the 50 respondents, the main department concerned with the teaching of Neonatology was that of Pediatrics. The teaching programmes were organised mainly during the student's posting in the department of Pediatrics; although in 6 it was during the period in the Department of Obstetrics and Gynecology. Some of the basic data on the bed strength of the nurseries, and the number of deliveries conducted in these institutions are indicated in *Table I.* It may be noted that three institutions actually had no neonatal

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TABLE I—*Background Information Related to Neonatal Care*

Feature	No. of colleges (n=50)
Annual No. of deliveries	
⩽ 2000	14
2001— 4000	12
4001— 6000	7
6001— 8000	3
8001—10000	3
>10000	6
Not specified	5
Nurseries	
Nil or 'Makeshift'	3
One	20
Two	21
Three	6
Total bed strength (Nurseries)	
⩽10	16
11—20	17
21—30	5
31—40	2
41—50	4
>50	1
Not specified	5

special care units or had only make-shift arrangements.

The stages in which the teaching sessions in Pediatrics and in Neonatology were commenced are noted in *Tables II and III*. As can be seen, there were considerable variations. Several colleges had actually not started teaching these subjects until the third clinical or final year. Again, there were marked differences in the number of sessions (didactic lectures and clinical demonstrations or group discussions) devoted to each (*i.e.*, Pediatrics and Neonatology).

The topics covered in the field of neonatology as lectures are recorded in *Table IV*. In most of the institutions the topics included for group discussions or clinical demonstrations conducted in smaller batches were noted to be similar to this list. Demonstrations on examination of the newborn infant and the use of equipments for resuscitation was done by all the centres. In two instances each, demonstration on the use of equipment for exchange transfusion and of the use of incubators were noted. Assessment of gestational age and neurological examination of the newborn were taught in 5 and 6 centres, respectively.

Evaluation

Regarding the status of Pediatrics in the local University examinations, in only 3 was the subject allotted a full paper in the final evaluation. In 39 centres, one section of the paper in General Medicine was devoted to Pediatrics. In the remaining, there was only one question or a short note on the subject. Two centres indicated that a Pediatrician was an examiner and in one institution, a 'short case' in Pediatrics was included in the clinical evaluation. In one centre Pediatrics did not form part of the evaluation at all.

As far as Neonatology was concerned, it was included as a short note in the paper in Pediatrics in 29 centres, in Obstetrics and Gynecology in 19 centres and in Medicine in 6 institutions. It was not covered at all in 3 centres.

Discussion

The objectives of undergraduate medical education is to train a doctor for manning the primary health centre (PHC) and provide basic health care to people. To achieve this in terms of neonatal care, he should be able to :

(*a*) Advise about the routine neonatal care in a way so as to promote baby

TABLE II—*Distribution of Teaching Session*

Commencement of session subject	No. of colleges		
	First clinical year	Second clinical year	Third clinical year
First Pediatrics lecture	13	22	15
First Pediatric clinic	24	21	5
First Lecture on Neonatal care	6	14	30
First clinic on Neonatal care	10	17	25

Period of clinical posting

Period (weeks)	First clinical year		Second clinical year		Third clinical year	
	Ped	Neon	Ped	Neon	Ped	Neon
Nil	19	34	13	21	1	1
1–4	23	12	29	16	24	14
5–8	2	—	6	7	10	20
9–12	1	—	—	—	13	7
Not mentioned	1	—	2	2	1	1

Ped = Pediatrics,
Neon = Neonatology

TABLE III—*Distribution of Teaching Sessions Neonatology*

No. of Lectures	Colleges
≤ 5	5
6—10	35
11—15	6
16—20	1
Not mentioned	3

optimal growth and development and protect him from illnesses.

(*b*) Diagnose a sick baby and treat minor illnesses at home and in the PHC settings.

(*c*) Give prompt treatment in an emergency and identify those needing referral for special care.

(*d*) Advice and provide adequate care during transport of a sick baby to the hospital.

(*e*) Supervise and train paramedical workers in basic neonatal care.

The methods of training used can be in the form of lectures, seminars, bed side clinics and follow-up of normal and sick babies at home and in the hospital. *Table V* describes the list of essential neonatal topics which can be covered during this training. For adequate fulfilment of the objectives, such a training should be carried out in collaboration with the Departments of Obstetrics and Gynecology and that of Community Medicine. Neonatal care at birth, perinatal asphyxia and care of a normal newborn can be usefully learnt during their posting in the labor room while they complete record of twenty labor cases. Follow-up of the babies thus born, till discharge from the hospital, can be a very good learning experience.

TABLE IV—*Course Content in Neonatology*

(The figures in brackets indicate the number of institutions which included the subject in their curriculum)

1. Risk approach (7)
2. Nomenclature related to the perinatal period (5)
3. General care of the normal newborn (45)
4. Birth asphyxia and resuscitation (42)
5. Low birthweight and prematurity (43)
6. Feeding including breast feeding (17)
7. Problems in the newborn
   - (*a*) Jaundice (43)
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   - (*h*) Tetanus neonatorum (2)
   - (*i*) Miscellaneous (4)
     (Thermoregulation, surgical problems, metabolic problems, cyanosis)

TABLE V—*Recommended List of Essential Neonatal Topics for Undergraduate Training*

Topics	Teaching method
1. *Introduction to neonatal care* Role of antenatal and intranatal care in preventive neonatology, definition of high risk pregnancy, nomenclature related to perinatal period, causes of perinatal and neonatal mortality	Lecture or Seminar with Departments of Obstetrics and Gynecology and Community Medicine
2. *Care at birth, perinatal asyphyxia and resuscitation*	Lecture/Seminar/Demonstration with Department of Obstetrics Gynecology
3. *Care of normal newborn* Routine care and breast feeding	Lecture/Clinic
4. *Problems of LBW and preterm* Feeding and temperature control	Lecture/Clinic
5. *Neonatal infections*	Lecture/Clinic
6. *Respiratory problems*	Lecture/Clinic
7. *Jaundice and bleeding*	Lecture/Clinic
8. *Seizures and neonatal tetanus*	Lecture/Clinic
9. *Congenital malformations*	Lecture/Clinic (Ped. Surgery)
10. *Care during transport* Danger signals, indications for referral, special care etc.	Lecture/Demonstration

Besides this, students can have clinics on a neonatal patient once a week during their posting in Pediatrics.

As shown in *Table I*, it is clear that, there is adequate patient material in our teaching hospitals for training students in neonatology. It is often asked if presence of a Special Care Baby Unit (SCBU) is essential for training a student in level-I care. Since a teaching hospital is a place providing the highest level of patient care in a particular region, presence of SCBU should be mandatory in such a centre. Besides, such a unit can be utilised in training students in clinical monitoring of patients, their early diagnosis and for the management of neonatal emergencies.

It was encouraging to note that nearly 85% teaching centres covered areas related to the care of normal newborn, low birth weight neonates, birth asphyxia, jaundice and infections. However, it was surprising to note that topics like neonatal feeding, respiratory problems, neonatal tetanus, convulsions, congenital malformations and care during transport were missing in the course content of more than half of the institutions (*Table IV*). Absence of uniform in the course content in various centres is a reflection of lack of awareness about the guidelines for neonatal training to the undergraduates provided by the National Neonatology Forum(2), Indian Academy of Pediatrics(4), Ministry of Health and Family Welfare, Government of India(5), and the World Health Organisation(6). In fact, it is high time, that an optimal programme for training in neonatology is finalised by the national bodies and approved by the Medical Council of India for implementation by the different medical colleges in the country.

Lastly, a word about evaluation in neonatology. Evaluation is a part of training process, *i.e.*, it provides reinforcement to the student about the importance of a particular topic. Hence, some question from neonatology, be it a short note, in Pediatric or Obstetric paper in the final examination, will go a long way in motivating students for the study of neonatal care.

Acknowledgement

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NOTES & NEWS

WRITING FOR INDIAN PEDIATRICS

A small booklet has been published giving detailed instructions about preparation of manuscripts for Indian Pediatrics (or for other journals). It lists common mistakes of usage and expression. The Journal will henceforth adopt a stricter policy towards the form and structure of the manuscripts; these must be in the style of the Journal and be free of mistakes. We will be forced to return badly prepared manuscripts.

The Heads of the Departments of Pediatrics are requested to urge their colleagues and students to purchase a copy of this tract.

Price: Rs. 10/-; Rs. 15/- by post.

The profits made by the sale of this booklet will go towards the Office Building Fund for Indian Pediatrics.

—Editor

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	Ped	Neon	Ped	Neon	Ped	Neon
Nil	19	34	13	21	1	1
1- 4	23	12	29	16	24	14
5- 8	2	—	6	7	10	20
9-12	1	—	—	—	13	7
Not mentioned	1	—	2	2	1	1

Ped = Pediatrics,
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TABLE III—*Distribution of Teaching Sessions Neonatology*

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Paediatric Education in India

(Postgraduate and Undergraduate)

BY

Dr. S. GUPTA, Dr. G. SRIVASTVA

"Productivity of the adult population is directly related to the health of the child population and a country losing large members of potentially healthy and productive adults because of needless infections and disease in infancy and childhood is wasting its national wealth."

The fundamental principle of medical education is to produce a good basic doctor. With tremendous advances in medical knowledge every day, every speciality has advanced considerably and the medical student is confronted with ever-enlarging curriculum on individual subject. It is therefore imperative that the courses should be prescribed in a manner that he is able to accumulate knowledge of various branches of medicine without overburdening. A pragmatic approach is needed to prune those specialities which he is not likely to come across in day-to-day practice, while increasing the courses of study of specialities which he is likely to come across amongst majority of his patients. Child health assumes greater significance in our country because 41% of the population is under 15 years of age and 45% deaths in the country occur among those below 15 years of age (U. N. Demographic year book, 1966). In India it is only in the last decade that realization has come to put the discipline of pediatrics on its proper footing. However, although thoughts have turned towards according pediatrics its due place amongst the various disciplines of medical education, the present day curriculum with respect to teaching of pediatrics still falls short of the minimum requirements. A general practitioner is expected to answer such questions as rearing of a child, infant feeding, immunization, prevention of disease and behaviour problems. With present day standard of pediatric education at undergraduate level the above demands of the patients are hardly ever met with and they have to fall back to methods in child care handed down the generations through mothers and grandmothers. With family planning as national policy it is timely to review the standards of undergraduate teaching and to ask whether the training of doctors in India is appropriate for the tasks they would be required to do, always keeping in mind the concern about the education of the basic physician. To assess the present day standard of pediatrics education at undergraduate and postgraduate level, a proforma was sent to all the medical colleges in India first time in February, 1967. Replies have been received from 73 of them over a period of 2 years and the following is based upon the data supplied therein (Table I & IV).

TABLE I

ZONES	States	No. of colleges in the zone	Reply recd.	Independent pediatrics department*	Year of establishment	Professor	Pediatrics beds	% of ped beds to total beds.
West	Rajasthan, Gujarat, Maharashtra, Goa.	22	16	14/2	1958 onwards (1 in 1948)	9	20-120	3.5-1.5
East	Bihar, Bengal, Orissa, Assam	17	11	5/6	1956 onwards	5	20-170	4-12
North	Kashmir, Punjab, Haryana, U.P. Himachal Pradesh, Delhi, Chandigarh	19	13	11/2	1957 onwards	8	42-200	8-15
South	Tamil Nad, Andhra Pradesh, Mysore, Kerala, Pondicherry.	31	27	21/6	1957 onwards (4 before 1957) (1 in 1948)	18	30-200	6-16
Central	Madhya Pradesh	6	6	6	1957 onwards	2	30-120	10-18

* Denominators indicate the number of colleges where paediatrics is under Department of Medicine.

TABLE II

Teaching and Research

ZONES	Undergraduate training			Postgraduate training				
	No. of colleges	No of lectures	Ward posting	Internship	No. of colleges	D. C. H. & M. D.	M. D. only	D. C. H. only
West	16	10-24	4 weeks to 3 months	15 days to 2 months	10	6	1	3
East	11	9	4 weeks to 8 weeks	1 month to 6 months	5	3	1	1
North	13	10-60	3 weeks to 2½ months	15 days to 1 month	9	9	—	—
South	27	10-30	12 days to 3 months	2 weeks to 2 months	13	9	—	4
Central	6	15-30	15 days to 3 months	15 days to 1 month	4	3	1	—

TABLE III

Paramedical Staff Pattern with total Number of Colleges in each Zone

ZONES	No. of colleges with paramedical staff	Social worker	Public Health Nurse	Health visitor	Aux. Nurse	Dietician	Sp. Ped. Nurse
West ...	9	5	4	4	4	1	7
East ...	4	2	3	2	1	—	2
North ...	10	6	2	5	2	2	5
South ...	16	9	9	6	9	3	10
Central ...	1	1	1	—	—	1	5

TABLE IV

Health Centres

ZONES	Number	Rural & Urban	Only Urban	Only Rural
West ...	12	8	1	3
East ...	5	5	—	—
North ...	10	5	1	4
South ...	17	11	5	1
Central ...	6	6	—	—

Autonomous Departments

The paediatric departments in various medical colleges have been set up only since 1948, the first two departments being in Bombay and Madras and till the year 1957 only in Six more medical colleges a separate department was existing. It is only after the year 1957 that separate departments were established in different medical colleges in the country. Of the 73 medical colleges from which replies were received, in 57, paediatric departments exist independently while in 15 as a subspeciality of medicine and in one under the obstetric department. Maximum number of paediatric departments exist as independent units in colleges belonging to south zone. In Madhya Pradesh, it is heartening to note that all six departments are independent.

Pediatric Beds

It is really a matter of concern that the number of paediatric beds in various teaching hospitals in the country vary from 5-15% of the total hospital bed strength. The number of pediatric beds in district & smaller hospitals is extremely small. Assignment of beds for children at least in the district hospitals is an immediate need. This will lessen the load on the teaching hospitals and would result in better care of the child. At any time, any children ward or hospital is over-crowded. It has now become necessary to have sub-specialities like pediatric cardiology, hematology, neurology, ophthalmology, otolaryngology, orthopedics etc., for better understanding and treatment. In fact a large number of attendence and admission in these specialities is from pediatric age group. No doubt with present day limitation of resources, it may not be possible to attain these objectives in the near future, but a beginning has to be made at least in a few selected teaching institutions.

Medical Personnel

A separate chair of Professor and Head exists in 42 out of 73 colleges and in the rest an Assistant Professor. Reader or Lecturer is the Head of the Department where paediatrics exists as a separate discipline. The staff pattern in the colleges is far too short of the needs. Not only the staff has to meet with the teaching requirements of the undergraduate and postgraduate students but have to manage the hospital services. In most of the teaching hospitals, the staff is appointed mainly on the basis of the number of students on roll rather than on the basis of work load.

Undergraduate Teaching

The state of undergraduate teaching is evident from the reports obtained in various colleges. The number of didactic lectures vary from 6 to 52 hours in the entire clinical years during MBBS course. The clinical or bed side teaching comprises of postings in paediatric wards varying from 15 days to 3 months. This is usually split in some colleges between 4th and 5th year of M.B.B.S. Course. No doubt every college is including pediatric lectures and clinical teaching in its curriculum; the number is hardly sufficient for the requirements. Whatever teaching is being done is mostly theoretical and very little practical training is being given. The Medical Council of India has recommended three months of pediatric posting, one month each in pediatric, medicine, paediatric surgery and neonatology out of the time allotted for internal medicine, general surgery and obstetrics & gynaecology respectively. It is felt that the paediatric education at undergraduate level must bear some relationship to the prevalent disease pattern in the country. It is also necessary to teach comprehensive child care and to coordinate the teaching with major local health problems of the area served by the medical college. A major cause for lack of interest exhibited by the under-graduate students towards the subject is the absence of examination in pediatrics.

Rotating internship in pediatrics varies. for a period of 15 days to three months in different colleges. However, in a majority of the medical colleges (60%) the posting is done for one month. At present posting in pediatrics has not been recommended by the Medical Council of India, and whatever time institutions have given for the subject, has been borrowed either from time allotted for Preventive & Social Medicine or other subjects combined.

Postgraduate Teaching

Paucity of beds and non-availability of trained and qualified teachers has resulted in the provision of post-graduate teaching in only 56.1% of the above colleges. As seen in Table II maximum number of colleges imparting postgraduate training were in North, followed by Central and Western regions. In South India even though the number of medical colleges was higher, those imparting postgraduate training were only 45%. Majority of the colleges impart training both for M.D. and D.C.H. The postgraduate training is theoretically biased in most of the institutions. In comparitively smaller number of institutions, the training

is residential with emphasis on ward-training.

Paramedical Staff & Preventive Pediatric Services

The enquiry from the medical colleges revealed that the pediatric departments have paramedical staff only in 56.3% of the colleges.

This comprises social workers, health nurses, health visitors, auxiliary nurses and pediatric trained nurses. In all colleges except two there is no pediatric dietician. As seen in Table IV 70.4% of colleges are engaged in running the rural or urban health centres. Some of them have only an urban centre or a rural centre. Most of these centres are run in collaboration with department of preventive and social medicine. With a shift of emphasis from care of sick child to comprehensive child care, study of child health and preventive pediatrics has recently been included in some of the university pediatric departments, which till now was the function of community services having no relation with medical colleges, and it is hoped that if not all, at least most medical colleges will be able to impart training for their students. Thus although two thirds of the departments have an urban or rural centre attached to them, minimum preventive and social pediatric coverage is possible. For the comprehensive child health care to succeed infracture like health visitors, social workers, nurses are very important and in their absence it is not likely to succeed.

Role in family planning

Role of pediatrician in family planning had till now been not recognised. It has been realised that the greatest motivation factor towards family planning is optimum health of the living children. It is this factor which leads the parents to adopt family planning. Incentives, propaganda and use of diverse forms of contraceptive techniques fail to motivate the parents for family planning if a number of children have died due to disease or are suffering from them.

As parents learn that the death of a high percentage of infants is not inevitable they become more receptive to the idea of family planning.

Research

Research at present is clinical oriented. Whatever is being done consists of evaluation of clinical data. Research being a time consuming process involving money and personnel, reason for its neglect is obvious. Lack of funds, personnel and time has resulted in hardly any experimental work.

In the field of pediatric education no single agency has done more to further the cause of pediatrics as UNICEF and W.H.O. UNICEF has aided in either the establishment or otherwise of 52 of these departments and in a majority of them grant in one form or other is continuing. Further UNICEF and WHO have aided in drawing attention of medical educationists to the needs of pediatric education by holding various conferences on pediatric teaching.

Recommendations

For any recommendation to be effective it should be realistic. With advancement at all stages of medical knowledge all the branches are craving for greater recognition. Initially fewer objectives are to be kept and once these are achieved, further aim should be based upon the past experience. It is felt that :

(i) Pediatrics should exist as a separate department in not only teaching institutions but at district hospital levels to be assigned for children.

(ii) Pediatric medical personnel have to be increased at all levels.

(iii) Pediatric care has to be assigned only to pediatrics trained doctors. The current practice of utilising the services for duties other than pediatrics must come to an end as otherwise training in pediatrics like DCH and MD is futile.

(iv) Paramedical staff in pediatrics have to be increased and greater facilities for their training provided.

(v) During undergraduate course this subject has to be treated as a major discipline. All candidates are to be examined by the Professor of Pediatrics either on his own or alongwith the Professor of medicine.

(vi) Postgraduate training has to be clinical oriented. Also it should be residential during the duration of the course.

(vii) Research facilities have to be increased especially in experimental pediatrics.

(viii) Training in comprehensive child care has to be an important aspect of pediatric education.

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ANNEXURE II

RECOMMENDATIONS OF NATIONAL WORKSHOP ON UNDERGRADUATE PEDIATRIC EDUCATION (1983, JABALPORE)

1. Objectives

Objectives that relate to undergraduate medical education in general, also apply to pediatric education. However, in view of special requirements of training in child health care, emphasis needs to be laid on certain specific objectives. The group discussion which endeavoured to define these objectives came to the following conculsions in the form of their final recommendations.

(a) It was agreed that a common set of national objecives, modified by local needs be available for training in child health. Such objectives should take into account the limitations of time, staff and equipment.

(b) Growth and development being the essence of child health the training should emphasise normal growth and development as an indicator of health, any deviation being recognised as ill health.

(c) The training should emphasise prevention of disease, affective promotion of health and care of common illness of infancy and childhood in their social, economic and cultural context.

(d) The inter-rlationship between illness in the context of the family and environment and that the child and mother are one inseperable unit should be understood thus emphasising the totality of care in health and disease.

(e) The student should be able to appreciate his limitations and seek assistance when required.

(f) The training should attempt at inculcating among the students the ability to appreciate the role of a doctor as a manager, teacher and organiser within the community entrusted to his care. His ability should therefore include the development of skills of communication and education.

(g) The student should be imbued with the spirit of selfimprovement in knowledge and skills in his day to day work.

II. Course Content

Since learning related to child health care involves several disciplines in preclinical, paraclinical and clinical, with considerable overlap in their course content, it can not be taught in isolation. Thus teaching of pediatrics cannot be done in the department of pediatrics alone. The group therefore strongly felt the need for having curriculum committees in all medical colleges with the head of the institution acting as chariman in order to achieve integration between departments for better teaching of child health.

A considerable part of the course content including growth and development, age dependent variations in structure and functions in a normal child, pathologic and immunologic responses etc., should be taught by the faculty in the related basic desciplines in collaboration with pediatric teachers during the period of pre and para-clinical training.

While curriculum organisation could vary from one institution to another depending upon the overall curricular structure and local convenience, the training programme should have a structured course with formal opening and closing sessions. The opening sessions should introduce the subject and outline its scope, explain training arrangements and the role of students in it; the closing session should, apart from student assessment, include course evaluation through student feed-back and discussions with the pediatric faculty.

The course content recommended in the areas of knowledge and skils is as under :

KNOWLEDGE

1. Growth & Development

Definition, parameters of growth, principles of growth, factors affecting physical growth, anthropometry (height, weight, arm and chest circumferences). Longitudinal growth and growth monitoring, weight charts, velocity of growth, growth centiles, physical and sexual growth at adolescence and sex differences in growth. Appreciation of and simple methods of screening children under three. Intelligence, its meaning and principles of assessment.

The knowledge of growth and development should be essentially clinically oriented.

2. **Nutrition**
Normal requirements of essential nutrients from birth to puberty, Breast feeding, physiology of lactation, composition of human milk, advantages, techniques, socio-cultural factors,pattern of normal stool in breast-fed babies. Normal nutritional values of common foods used in the region. Breast milk versus animal milk, hazards of tinned milk and the feeding bottle. Prevalence, incidence, etiopathogenesis and clinical recognition of deficiency disorders. Dietary management in health and disease including various grades, and types of PEM, Vitamin deficiencies, anaemia, goitre (where prevalent), their management in hospital health centre and home. Beliefs, customs, fallacies related to foods, and breast feeding. Principles of appropriate weaning foods, locally available, home-made and cheap. A brief outline of national nutrition and related programmes (ICDS, MCH, EPI etc).

3. **Preventive and Social Asects**
Essential demographic facts, special problems of child in rural areas and urban slums, mortality and morbidity and their major causes. Family planning and child health, advantages of birth spacing, disadvantages of large families. Available special health services for children in the region. At risk concept. Immunisation : basic principles, schedules, storage, cold chain, absolute contraindications and fallacies.

4. **New Born**
Normal newborn and events during neonatal period. Problems of low birth weight babies at home and community.Common causes of morbidity and mortality.Perinatal asphyxia and its consequences. Birth traums-recognition and referral. Neonatal jaundice-common causes and genesis. Sepsis in newborn. Early recognition of life-threatening anomalies and illness (e.g., septicemia, tetanus, esophageal atresia etc) Recognition of danger signals in the newborn. Common respiratory problems, their recognition and management. Feeding of normal newborn with special reference to the first feed in relation to hypoglycemia.. Drug therapy in newborn. At-risk concept in pregnancy and newborn.

5. **Common Symptoms & Signs and their Diagnosis**
Fever, crying, failure to thrive, pallor, edema, failure to move a limb, anorexia, vomiting, diarrhoea, abdominal pain, abdominal distension, bleeding per rectum, constipation, acute abdomen in a child, jaundice, cough, stridor, wheezing, breathlessness, cyanosis, headache, stupor and coma, convulsions, failure to pass urine, frequency and polyuria, passage of coloured urine (haematuria etc), abnormal urinary stream, joint swelling and pain, bruises, purpura and petechiae, hepatomegaly and splenomegaly, lymphadenopathy, stunted growth and delayed development.

6. **Common Systemic Diseases in Children**
Listed below with special reference to their clinical recognition and management in hospital, health centre and home, their prevention where, possible and point referral.
Diarrhoea and dehydration: recognition and management including oral rehydration. Hepatitis, Indian childhood cirrhosis and cirrhosis in children, hepatic failure. Acute respiratory infections, suppurative pulmonary disease (bronchiectasis, lung abscess), foreign body inhalation, asthma and asthmatic bronchitis. Meningitides, encephalitides, encephalopathy, epilepsy, myelitis, polyneuritis,poliomyelitis, intracranial space occupying lesions (general features, diagnosis, referral) hydrocephalus, chorea, cerebral palsy, mental retardation, subdural effusion. Rheumatic fever and heart disease, recognition of acyanotic and cyanotic congenital heart disease, pericarditis, myocarditis, hypertension, congestive cardiac failure. Rheumatoid arthritis. Anaemias (congenital and acquired), leukemias, purpura and hemophilia Underscended tests, pituitary disorders (gigantism, dwarfism, hypogonadism, diabetes insipidus), thyroid disorders (cretinism, juvenile myxedema), Diabetes mellitus, adrenals (adreno-genital syndrome, adrenocortical insufficiency). Common poisonings and accidents in children. Common behavioural disorders in children met with in practice such as breath holding, pica, enuresis etc. Minor surgical problems, surgical emergencies recognition and timely referral.

7. **Common Specific Infections in Children**
(Clinical recognition management and

prevention) Measles, whooping cough, diphtheria, mumps, poliomyelitis, rubella, chickenpox, typhoid, dysentry (amoebic and bacillary), tuberculosis, leprosy, tetanus, malaria, infective hepatitis rabies, worm infestations (roundworm, threadworm, hookworm,tapeworm, filariasis, guinea worm).

SKILLS

Practical and clinical procedures

1. The student should be able to take a good but relevant history conduct a clinical examination, demonstrate physical findings and explain their significance. The student should be able to make a provisional diagnosis and indicate major differential diagnosis, prescribe routine investigations and carry out basic management.
2. The student should be able to do the following:
   Assessment of nutritional status of mother and child.
   Weight, height, head circumference and mid-arm-circumference measurement, interpretation of growth curves.
   Development assesment in children below 3 years.
   Venepuncture.
   Throat, nasal, rectal swab.
   Intradermal test.
   Immunising procedures.
   Enema.
   Side-lab investigations.
   Interpretation of common X-rays.
   Feeding techniques.
   Oxygen therapy (catheter and mask).
3. The student should have observed the following procedures in children: Venesection; I.V. infusion; lumbar puncture; paracentesis (abdominal/thoracic); preparation of patient for radiological procedures, bone-marrow aspiration; biopsies, intubation, exchange transfusion; postural therapy.
4. Regarding newborn:
   Receiving the newborn, transportation during referral.
   Ressuscitation including suction, Ambu bag and endotracheal intubation (learnt from still births).
   History taking and physical examination and recognition of gross deviations from normal, estimations of gestational age and distinguishing term from preterm babies.
   Starting an I.V.line, umbilical vein catheterisation.
   Aseptic technique in newborn care.

II. Teaching Methods

It was appreciated that the methods of teaching employed must take into account the constraints of time, faculty-student ratio, equipment and a large course content. Under the circumstances it was agreed that even though the lecture method was relatively ineffective, yet in view of the constraints enumerated, it could continue and therefore efforts should be made to imporve the lecture technique through improving competence of teachers and techniques e.g., by providing hand-outs, including references and factual information, limiting the lecture to essence and concept; demonstrating material and patients, effective use of the blackboard, judicious use of slides, help as to where further information could be obtained, involving students by raising questions and splitting the lecture.

With respect to clinical teaching it was felt that the under-graduate was inade-quately prepared in techniques of history writing and clinical examination when he arrived for posting in the pediatric department so that he could not benefit adequately from the learning experiences provided in the department. To strengthen this aspect of teaching it was agreed that the pediatric faculty should offer its services to the institution outside the teaching time alloted to pediatrics. In view of large batches required to be taught at the bedside, it was felt necessary to have adequate physical facilities in a room adjacent to the children's wards for students and teachers to sit around a patient for facilitating demonstration and discussion. Clinical teaching could be done through the symptom complex approach by discussions of a number of patients of the same symptom/sign in a clinical session as well as by taking up individual disease entities. Teaching in the OPD was considered desirable provided that teaching and services were separated so that the teacher not conducting services on that particular day could be made available for the purpose.

Group teaching was considered useful and effective and could include socio-medical conferences and demonstration of emergencies and teachniques. 'Tutorial group' could replace didactic teaching as far as possible.

Since sensitizing students to socio-medical care including problems of the handicapped was considered desirable, visits to PHC and institutions like schools for the handicapped, creches, anganwadis etc supported by group discussions was recommended as a learning experience in collaboration with reapective departments and agencies.

It has been generally agreed by various expert groups (WHO etc) that a minimum of 300 hours is absolutely essential to do justice to a curriculum in child health. However, time available to the pediatric departments in most institutes in the country does not exceed 200 hours. Until such time as the optimum hours become available to the department of pediatric the distribution is recommended as under:

(A) Lectures : Hours

(1) By the department of pediatrics (weekly lectures during the final year) 30

(2) Integrated teaching in structure, function, pathology, immunology, etc with the preclinical deptts (10 hours), de-partment of community medicine (10 hours) & obsteric & gynaecology (10 hours) 30

(B) Clinical teaching : 12 weeks posting.

(4) weeks junior and 8 weeks senior) approximately 5 working days per week, effective teaching 3 hours per day (60x3 = 180) 180

This includes 5 morning sesions (15 hours) for socio-medical conferences on the pattern of "Small group discussions".

(C) Visits to community & field practice areas 3 hours per visit, total 3-5 visits 15

(D) Evening tutorial group (clinical clerkship) 4-5 (2hrs. each) 10

The topic-wise time distribution at the institution and departmental level can be worked out depending upon local needs and convenience.

Curriculum organization (Please see under Course Contents)

IV. Student Assessment & Course Evaluation

The group unanimously felt that the overall assessment of the student must take into account not only his performance in the final examination but should also provide adequate weightage to regularity, performance of assigned work, clinical records and assessment carried out at the end of the clinical posting (alloting marks to each) to ensure as far as possible that the final examination does not become a mere obstacle course. Thus, as much as possible of the students' work and performance should be brought up to the final examination.

In the assessment of students' knowledge at the final year examination, a balanced combination of objective (M.C.Q.) short answer and essay-type questions should be set. It was felt that setting of objective-type questions required experience and hence the need to improve competence of teachers. At the Final clinical examination the group felt that effort should be made at, as objective an assessment, as possible. Evaluation should not be heavily clinically oriented but be broad-based to include related nutritional, developmental, preventive and socio-cultural aspects in relation to patient management problems.

Evaluation of each training session at the end of the posting was considered necessary. This could be done through analysis of periodic feedback by the students and discussions among members of the pediatric faculty. Such an ongoing excercise could ensure improvement of subsequent training programmes.

ANNEXURE III

RECOMMENDATIONS OF PEDIATRIC EDUCATION SUB-COMMITTEE OF INDIAN ACADEMY OF PEDIATRICS (DELHI BRANCH) (1987)

Course Content of Pediatric Medical Education for Undergraduates

Training Programme

In order to achieve the objectives of training the undergraduates as per expectations, one has to re-examine the course content of their teaching and training programme which is grossly inadequate at present.

Training programme of undergraduates can be discussed under following headings:

I. Introduction to peculiarities of neonates, infants and children in Pre Clinical (Phase I) teaching programme.
II. Introduction to Pediatrics in Paraclinical (Phase II) teaching programme.
III. Introduction and training in Pediatrics in Clinical (Phase III) of undergraduate training programme.
IV. Pediatrics as a separate subject in Final Year MBBS Examination.
V. Training in Internship Period.

I. Introduction to Pediatrics in Pre Clinical (Phase I)

1. HUMAN ANATOMY :

The following subjects relevant to Pediatrics should be introduced:

(i) Human Embryology and reference to various congenital malformations and developmental defects.
(ii) Principles of human genetics and its practical application with reference to genetic disorders in children.
(iii) Introduction to growth and development by a teacher from Pediatrics.

2. HUMAN PHYSIOLOGY :

(i) Changes in human physiology from birth to adult-hood
(ii) Variations of normal physiological values from newborn period to adulthood.
(iii) Nutrition and dietetics with special reference to nutritional requirements and nutritional disorders in children.

3. BIOCHEMISTRY

(i) Biochemical examination of samples of body fluids
(ii) Laboratory work in practical biochemistry with normal variations in values in children.

4. INTRODUCTION TO COMMUNITY PEDIATRICS :

In accordance with the recommendations of Medical Council of India 3 months of Preclinical training out of toal 18 months (preferably during first 3 months) should be spent in introduction to community Medicine. Pediatrics with relevance to community should be introduced during this period with special attention to:

(i) Principles of sociology including demography, population dynamics, social factors related to health and disease, community behaviour and ecology.
(ii) Visit to hospital for familiarisation with elementary nursing practices, immunisation clinics, Under five clinics, art of communication with patients including history taking and medico social work.
(iii) Visit to various projects related to child health - ICDS, MCH services etc.

II. Introduction to Pediatrics in Para Clinical (Phase II)

1. CLINICAL PHARMACOLOGY

(i) Emphasis should be given to metabolism of drugs in neonates, infants and children.
(ii) Dosage schedule for Pediatric Drug Therapy in colloboration with teachers of Pediatrics.

(iii) Group discussion on actual cases where therapeutic programmes are carried out in the Ward.

2. MICROBIOLOGY AND PARASITOLOGY

(i) Microbiology teaching should give more stress on preventable common infectious diseases in children.

(ii) Parasitology with special emphaisis on the prevailing parasitic disease in India including childhood malaria, giardiasis etc.

3. COMMUNITY MEDICINE

(i) The course curriculum of Community medicine should give due emphasis on health promotion, health education and maternal and child health.

(ii) Special emphasis on :
Immunisation programme including immunisation techniques and maintainance of cold chain.
Nutrition and growth monitoring.
Organisation of Pediatric services.

(iii) Teachers from Pediatrics should introduce community orientation in training programmes in colloboration with teaching staff from Community Medicine Department.

III. Introduction and Training of Pediatrics in Clinical Training Programme (Phase III)

A. Course Content :

The training programme should be geared in such a way that every medical graduate is able to manage the common pediatric problems especially the common pediatric emergencies. Greater emphasis should be laid on Growth monitoring, breast feeding, ORT and Immunisation.

At least 25% of teaching schedule should be directed to Neonatology. Following subjects should be dealt with in detail :

(i) NEONATOLOGY:
- High risk infants
- Resuscitation of newborn
- Management of Premature baby
- Normal newborn and its care
- Neonatal emergencies e.g. birth anoxia, birth injuries, hyperbilirubinemia, infections etc.

(ii) NUTRITION: - Infant feeding (breast, artifical and weaning)
- Normal nutritional requirements and deficiencies with special emphasis on PEM

(iii) GROWTH & DEVELOPMENT:
- Normal and variations in growth and development
- Growth monitoring

(iv) DIARRHEAL DISEASE :
- With special reference to management of diarrhea at community level with emphasis on ORT

(v) IMMUNISATION :
- Schedule, Techniques
- Maintainance of Cold chain

(vi) ACUTE RESPIRATORY INFECTIONS IN CHILDREN

(vii) INFECTIOUS DISEASES

(viii) PEDIATRIC EMERGENCIES

(ix) ACCIDENTS AND POISONING IN CHILDREN

(x) PEDIATRIC DRUG THERAPY

Duration of Training :

1. A Minimum period of 8 weeks training in Pediatrics ought to be imparted to medical students in 2nd Clinical year (IVth year). The training should include:

(i) History taking and examination

(ii) Assessment of growth and development

(iii) Diagnosis and management of malnutrition

(iv) Identification of various nutritional deficiencies

(v) Management of diarrhea

(vi) Student should get familiar with emergency pediatrics and should be posted in Pediatric casualty department by rotation.

(vii) Practical procedures should be demonstrated

(viii) Each students to be alloted some beds in the wards and their respective patients to be followed by the students and the case records to be submitted to the Department at the end of the posting for further evaluation of internal assessment.

2. 12 weeks training in 3rd clinical year (Final year). The training should include :

(i) A revision of knowledge acquired in 4th year

(ii) Sufficient cases to be shown to cover all

important areas of Pediatrics.

(iii) Due stress should be laid so that the students acquire practical skills in the following procedures :

- Simple laboratory techniques, blood examination, urine analysis, stool and sputum examination.
- Injections:
- subcutaneous, intramuscular, intravenous infusions and transfusions
- Venesection
- lumbar puncture, ascitic tap, pleural tap etc.
- immunisation techniques

(iv) Case records - same as above (viii)

IV.Examination in Pediatrics

In order to implement the desired course content, to effectively impart the knowledge to undergraduates and to monitor the training scheme it is very essential to have a sseperate examination in pediatrics as a part of Final year MBBS examination. Considering the importance of the subject, it is not possible to assess the knowledge and clinical acumen of students just from one section of part-I of theory paper in General Medicine as suggested bu MCI. Unless a student is thoroughly examined in clinical cases and viva voice the assessment is not really rational.

Therefore it is suggested that Pediatrics be a seperate subject in Final year MBBS Part II examination besides General Medicine, Surgery, Obstetrics and Gynaecology. This is already a practice in most of the developing countries particulrly, African countries where the problems are similar to India.

In many universities including Kashmir University and Nagpur this long overdue recommendation is already being implemented and it is a pity that some of the leading universities like University of Delhi is so impractical and backward in its implementations.

The distribution of marks should be as under:

Written - one paper	.	80 marks
Oral ---	.	20 marks
Clinical ---	.	75 marks
Internal assessment (theory)	.	15 marks
Int. Assess. Clinical	.	10 marks
TOTAL	.	200 marks

Pass = 50% in the aggregate provided the candidate obtains 50% in the clinical examination.

V.Internship training Programme

The compulsory Rotatory Internship must include training in Medicine, Surgery, Obst. & Gynae. and Pediatrics on equal basis. The training should consist of:

(i) Labour room and neonatology posting seperately or from the training period in Obst. and Gynaecology.

(ii) Exposure to Community Pediatrics and actual case management of Pediatric patients. This may be done during their posting in Community Medicine.

(iii) Adequate training to handle the patients in OPD

(iv) Recording of case history, examination and investigations of hospitalised cases.

(v) Exposure as, first on duty, to all emergencies in Pediatrics under the supervision of seniors.

(vi) Involvement in departmental activities like case presentation, seminar etc.

(vii) Laboratory techniques, blood examination, urine analysis, stool and sputum examination.

(viii) Practical procedures like lumbar puncture, ascitic tap, pleural tap, liver biopsy, bone marrow aspiration etc.

training. However there is no substitute for the teacher himself setting a role model before the students for triggering the affective domain.

Since mother and child constitute one inseparable unit, it is essential to integrate the training with the help of three departments viz., Paediatrics, Obstetrics and Gynaecology and Preventive and Social Medicine (Desai,1980). For Example, at risk concept, can be imparted as follows: An Obstetrician can deal with at risk mother, the Paediatrician with at risk baby and the Specialist from the Preventive and Social Medicine with Health Education of Paramedical workers in identifying high Risk Mother and baby in the community. Similarly topics such as ante-natal care, normal labour, Purperium, complications of pregnancy can be tackled successfully under integrated teaching. (Narayanan, 1981).

Conclusion

The approach to the identification of instructional methods in the area of neonatology should be based on sound educational principles and practical considerations. The methods suggested in this paper are not only suited to realise the pre-determined objectives, but also feasible in terms of physical facilities and availability of training manpower. Much depends upon the degree of co-ordination among allied disciplines to impart holistic training programme in this vital area.

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DEVELOPMENT OF TASKS AND OBJECTIVES FOR UNDERGRADUATE TRAINING IN NEONATOLOGY

B.VISHNU BHAT*
B.V.ADKOLI**

*Associate Professor of Pediatrics **Assistant Professor of Educational Technology
JIPMER, Pondicherry.

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ABSTRACT

The present day undergraduates' training programme in Neonatology is found to be inadequate and fragmentary. The training lacks clear definition of objectives. The present study is an attempt to formulate a list of Tasks expected to be performed by the students alongwith Educational Objectives so that the training programme in this vital field becomes more effective and relevant to the needs of a basic doctor.

Introduction

There is an increasing stress on the health of children while formulating the social and health policies of any country. The ultimate physical, socio-economical and intellectual status of any society depends to a large extent on the quality of the care given to the children during the early years of life. In developing contries 50% of the infant mortality takes place during the neonatal period. In India about 50% of the live borns will not see their second month of life (Govt. of India, 1987). The outcome among the survivors will also be decided either at the time of birth or within the first four weeks i.e. during neonatal period. Moreover the practice of small family norm can be achieved only if we are able to ensure the survival of babies without any defects.

Unfortuately, the training imparted to the undergraduates in this vital area is far from being satisfactory (Narayanan, 1987). Presently neonatology is an upcoming branch of Pediatrics with no definitive guidelines for the undergraduate training. In most of the medical colleges, there is no proper coordination among the Obstetricians and Pediatricians as regards the training programme. Unless the curriculun is defined properly and implemented systematically, the basic medical doctor will not be in a position to deliver the goods. With this in mind,a study was undertaken to formulate curriculum in neonatology for the training of undergraduates.

METHODOLOGY

The systematic approach to the development of curriculum involves the following steps. (Abbat, 1986)

1. The study of curriculun deteminants
2. The analysis of Tasks
3. Formulation of Educational Objectives
4. Provision of Teaching-Learning experience including course content, methods and Media and time schedule.
5. Plaining of Evaluation, both during the training and at the end of the training.

An attempt was made to identify the functions to be performed by a basic doctor for the care of the new born (Narayanan, 1981; Govt. of India, 1982; W.H.O, 1977). Based on these a number of 'Tasks' were identified (Guilbert, 1981). The precision and relevance of the tasks were ensured by holding discussion with colleagues, students besides taking into consideration the deliberations of the National Neonatology Forum and the personal experience of the authors over the years.

The present part of the work relates to the identification of Tasks and formulation of Specific Instructional Objectives.

DISCUSSION

A list of tasks and corresponding statement of Instructional Objectives has been given in Table-1. The highlights of the same are as follows:

Since the tasks were identified on t basis of actual functions to be performed a basic doctor, they tend to be realistic relevant to the actual needs. Care of t normal new born, identification and t management of common problems are i cluded in the curriculum. Inborn errors metabolism, uncommon genetic disorde have not been included keeping in view t requirements of a basic doctor.

The objectives formulated in this study a observable and to large extent measurab This will enable the adoption of pro training experience and also measureme of the learning outcome objectively a reliably. In case of attitudinal objectiv accurate measurement may not be feasib However, their inclusion the training p gramme is felt indispensable. For instan the appreciation of the need to recogn the newborn as an individual and evin care while performing procedure on t baby are of vital importance in the train programme.

The consideration of ' feasibility ' is an e sential factor in the formulation of a objective in the training programme. In t present study a successful attempt h been made to see that the tasks identifi and the objectives formulated are attai able within the constraints of availa physical resources, training manpower a the time. The normal infrastructure co sisting of the faculty members, resid and nursing staff is adequate to attain t

TABLE: 1 Table showing the list of Tasks and Educational objectives

KNOWLEDGE OBJECTIVES	SKILL OBJECTIVES	ATTITUDINALOBJECTIVES
Task 1 : To manage a normal new born		
The learner shall be able to:	The learner shall be able to	The learner shall be able to
1. Enumerate the normal anthropometric measurements.	1. Clean the eyes, umblicus, and skin of the new born	1. Convince the mother the need for breast feeding
2. Enlist the physiological variations	2. Prevent hypothermia by covering the baby	2. Appreciate that mother and child constitute one unit.
	3.Demonstrate breast feeding	3. Appreciate that the new born is an individual with a right to love, affection and protection against painful stimuli and infection.
Task 2 : Resusciatate an asphyxiated baby		
1. Define asphyxia and identify its causes	1. Resusciatate an asphyxiated baby using bag and mask	1. Appreciate the need for the immediate resuscitation of the new born
2. List the equipments needed for resuscitation		2. Evince care in giving the prognosis of an asphyxiated baby to the parents
3. Apply apgar scoring for the assessment of asphyxia		
4. Enumerate the steps involved in the resusciatation and management of any a sphyxiated baby		
Task 3 : Assessment of Gestational Age		
1. Enumerate morphological and neurological criteria for assessing the gestational age	1. Assess the gestational age by using the criteriae	

Task 4 : To diagnose common congenital -Malformations

1. Enumerate the common congenital malformations	1. Identify congenital malformations including passing of rectal catheter and gastric suction	1. Give proper counselling to the parents in cases of the congenital malformations
2. Refer the cases requiring surgery appropriately		

Task 5 : Management of low birth Weight Baby

1. Define low birth weight	1. Differentiate between term and pre-term low birth weight	1. Appreciate the need for special care in the management
2. List the differences between term and pre-term low birth weight	2. Able to manage a low birth weight baby	2. Explain the prognosis of a low birth weight to the parents
3. List the risk factors in a low birth weight baby		
4. Enumerate the steps involved in the management of low birth weight baby.		

Task 6 : Management of common birth injuries

1. Enlist common birth injuries and their causes	1. Diagnosis birth injury and manage effectively	1. Take preventive care to avoid birth injury
2. Enumerate the steps involved in the management of common birth injuries		

Task 7 : Management of neonatal infections

1. Enlist common neonatal infections	1. conduct appropriate investigation and manage a given case	1. Evince care for preventing neonatal infection
2. Enumerate the predisposing factors 3. List the clinical presentations		

Task 8 : Management of neonatal jaundice

1. Enlist the causes of neonatal jaundice	1. Manage neonatal jaundice after appropriate investigations	1. Educate the parents regarding the need for antenatal blood grouping and prevention of Rh disease of the new born
2. Define physiological jaundice 3. Enumerate the causes of physiological jaundice and haemolytic disease of the new born 4. List the clinical features in case of kernicterus		

Task 9 : Management of Neonatal Convulsions

1. List the common causes of neonatal convulsion	1. Conduct appropriate investigation and treat a case of neonatal convulsion	1. Convincing the parents the need for long term treatment in persisting convulsion
2. Enumerate the steps in the management.		

Task 10 : Management of Anaemia

1. List the common causes of anaemia	1. Perform investigation and manage a case of anaemia	1. Impress the paramedic in the proper tying of the cord and avoiding injury to the baby
2. List the steps involved in the investigation & management.		

Task 11 : Management of respiratory distress

1. Enumerate the common causes	1. conduct appropriate investigation /management of respiratory distress	1. Appreciate the need for prevention of premature delivery to avoid hyaline membrane disease
2. List the steps involved in investigation and management of respiratory distress		

Task 12 : Management of bleeding in the New born

1. List the common causes of bleeding	1. conduct appropriate investigation and management of bleeding in new born.	1. Makes habit to avoid injury during delivery and collection of blood samples
2. List the steps involved in the diagnosis and management of bleeding in newborn		

Task 13 : Management of a high risk baby

1. Enumerate the high risk factors	1. Diagnosis of high risk neonate and conduct appropriate management	1. Appreciate the need for identifying a high risk baby in preventing neonatal mortality and morbidity.
2. Refer to the appropriate level of health care		
-------	General	
	1. Collect approprite blood samples for investigations	1. Assume leadership to paramedical staff in neonatal care
	2. Perform Lumbar puncture	2. Educate the public and the paramedics in neonatal care
	3. Start an intravenous drip	3. Assume responsibilities for continuing education in the care of the new born
	4. Insert umblical canulatio	
	5. Use warmer, phototherapy unit, oxygen-tent etc	

objectives set in the curriculum. The actual implementation of these objectives over the last two years is found to be highly satisfactory.

In conclusion, an attempt has been made to formulate Tasks and Objectives, which are realistic and highly useful in imparting training to the undergraduates in Neonatology which has been gaining significant attention recently. The tasks and the objectives identified are requirements. However, it is hoped that the model suggested in the paper will stimulate other workers to initiate similar efforts, so that the curriculum in this vital field becomes more systematic and meaningful.

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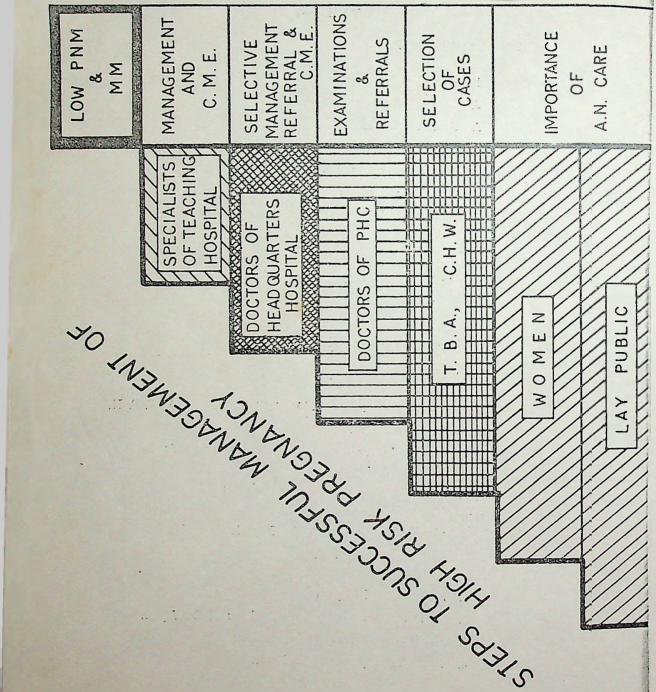
TABLE—IV



Medical Education for Child Health

By

David P. Haxton

Regional Director, UNICEF South Central Asia New Delhi

Education and health—of, by and for the people—are prime movers of social progress. It is only natural that these should focus primarily on children who—after all—have the highest potential for development. This briefly is the perspective in which UNICEF sees the relevance of advancement of medical education and the theme of Child Health Care chosen for this Session. We are naturally delighted to participate in this influential discussion. And we look forward to its accelerating impact on current efforts to formulate a national medical and health education policy, in pursuance of the National Health Policy announced two years ago.

From the beginnings of UNICEF cooperation in India in the late forties, our involvement in the field of health has been more intimate than in any other sector. And our collaboration with the medical profession has been closer than with any other professional group. This continuing relationship encourages us to present a few observations on the health system in general and on medical education in particular—in the context of child health and development.

I will first touch on what I perceive to be certain broad characteristics, positive or negative, of the present situation ; proceed to add my own support to proposed and needed changes in policy, and finally suggest some possibilities for action which may be taken right away by the medical profession to transform child ill-health into child health, without waiting for structural changes.

UNICEF views the present phase as one of transition of a public health system developed in a particular historical context into another, more suited to a democratic society. The trend is evident and unmistakable but the time it is taking to come into its own is unacceptable in the social sense. The task of all of us is to strengthen the trend and compress the time.

The UNICEF concern with child health and development is predicated upon the effective emergence of what the Bhore Committee of 40 years ago termed the 'social physician'. We understand this ideal as an alloy of professional competence, social concern and leadership quality on the part of a medical doctor who would assume the responsibility for the health of a defined population group, insofar as the people cannot ensure it on their own. The essential function of a doctor is suggested by its original meaning of 'teacher'. We note with concern that this vision is, by and large, yet to be realised. How to move towards it is, in our view, the crux of medical and health education.

Fortunately there is little that can be added to the wealth of insights contained in a series

of reports by leaders from the medical profession itself: such as the committees linked to eminent names like Mudaliar (1962), Mukerjee (1955), Jungalwalla (1967), Kartar Singh (1975), Shrivastav (1976), and Ramalingaswami (1981). The sum of these reports points to the need to establish a harmonious and dynamic balance between clinical and community medicine, medical doctors and paramedical workers, health services and medical colleges, common ailments and esoteric concerns, theoretical knowledge and practical priorities. Given the pre-existing bias, this implies major corrections in directions in which considerable preparatory action has already been taken. Decisive steps will have to follow.

For example we should be greatly encouraged by the fact that the health infrastructure has been developed to a potential which could permit preventive and social medicine to be practised successfully and countrywide. The nearly 6 000 primary health centres, more than 70 000 sub-centres some 250,000 community health volunteers are in position. This means that on the average 100,000 population will have a primary health centre, over a dozen sub-centres, around 50 medical and paramedical employees and a hundred or more community health volunteers. This is apart from other major health-related facilities like the integrated Child Development Services (ICDS) which would cover in about a year's time a fifth of the development blocks in the country. And there is the vast strength of tens of thousands of private medical practitioners. If access to health for all is not achieved in appointed time the reason will not certainly be any lack of infrastructure. Rather it will be related to the orientation and capability of the health professionals and supporting cadres—the health workers. Their education, orientation, and motivation are therefore the key to change.

The imperative for change is underlined both by the functional weaknesses of the existing health system despite its impressive spread, and the social challenge posed to it by the goals set for the current century. The life expectancy is 52 years against a target of 64, crude mortality 14 against 9 and infant mortality 125 against 60. Against this background, the importance of reducing child mortality becomes crucial, in a country where children comprise over two-fifths the total population. For, 45 percent of deaths occur below the age of 5 years, more than half in infancy. And the first month of life accounts for half of infant deaths due to low birth-weight, neonatal asphyxia, tetanus of the new born and other intra-partal problems. In the first year of life diarrhoea and pneumonia claim the bulk of deaths, aided, of course, by malnutrition. And immunizable diseases, prominently including measles, continue to claim a large number of lives in spite of availability of effective vaccines It is the considered view of UNICEF that this dismal picture, related largely to rural communities, can be changed and that the national health targets including an infant mortality rate of 60 are attainable within the time, resources and technologies presently available in India. The point at which people, resources and technologies can be efficiently marshalled to a common purpose is in medical education —in the initial training and orientation of all health workers and in in-service upgrading of knowledge and skills.

It is hardly necessary for me to go into the means and methods of strengthening this dimension of medical education—beyond conveying our broad support to certain proposals already widely discussed.

For instance, most of the present training of graduate doctors is examination-oriented, didactic, clinical and curative in emphasis. Students become at best clinical curative doctors with little knowledge of, or interest in community interaction or in leading a health team with a measure of managerial competence. Even where social aspects of a disease are recognized, there is only marginal involvement by the health services or medical colleges in coming to grips with them—barring an exception or two which only prove the rule. Even where medical colleges have tried to reorient medical education in the direction of community health, often they have only moved clinical curative services into the community rather than accepting the responsibility for the health of the population. Such a responsibility should be understood not so much in terms of *providing* health service as in *working together* with the community for its health. This concept implies that the experience of living and working with the community and para-medical personnel—who should be considered colleagues—should become a substantial part of undergraduate training. And the examination process leading to the medical degree should be concerned equally with clinical and community tasks. This concept should be extended internship.

The view is widely shared that the present examination system is the major single obstacle in the way of comprehensive health care at the village level. As of now, community experience, clinical competence and supervisory capabilities are of little help in passing examinations It is even arguable that students deeply involved in community work tend to suffer in the present system. Unless this is changed through appropriate curriculum design, training methods, evaluation techniques and continuing medical education, it is unlikely that Indian doctors can assume the leadership role to their own country's advance towards better health through primary and preventive care.

A useful criterion to identify a "social physician" would be the time he or she spends in curative services. It has been suggested that medical officers in the health service should be encouraged to spend less than a quarter of their time in curative services, making greater efforts to delegate these tasks and allowing themselves more time to administer the health system under their control. This presumes that medical personnel will willingly take up a career of providing health care in rural areas. The presumption would be valid only if undergraduate training and orientation is radically reshaped towards that end. Even postgraduate training in preventive and social medicine could be geared much more than now, to the practical needs of the public health system, based on an epidemiologic understanding of diseases.

Childhood diseases in India are well-known-their prevalence, locations, causes and consequences. Certain priorities are dictated by them in the context of the present, and prospects in the nation's future. These priorities cannot wait until reorientation of medical education is achieved. The answers made available by medical science and development experience have to be applied here and now before further irreversible damage is done to the country's human resource.

For example, every 10 seconds, somewhere in India a child is struggling for life against diarrhoeal dehydration. The answer is known, uptodate, scientific, safe, inexpensive, practical and effective for 95 percent of the cases of diarrhoea. But unless it is used, on the initiative that rests with the medical profession, it will rematn a mere potential, A national programme of diarrhoea management exemplifies the opportunity for practising some of the principles we have discussed earlier in the context of reshaping medical education. Thus,

—Mothers give the home made oral rehydration solution to prevent dehydration.

—Health workers use ORS packets to correct mild to moderate dehydration, and

—Health centres and hospitals provide intravenous therapy to treat severe dehydration.

A complementing design such as this for team work in community health is what primary health care is about. Even as medical students are 'educated' on it, medical practitioners in and outside government can set a trend—to the immediate and lasting benefit of children among the poorer segments of society,

The same principles applies to equally simple, but socially vital, primary health intervention like measuring weight and height for age, without which neither mother nor health worker nor peadiatrician may notice growth faltering in time to arrest and reverse it relatively easily. Thus it becomes a function of the community health system, under the leadership of the medical doctor, to make weight and height (or length) measurement possible for children from poor communities,

We all know that the best protection against six of the most dangerous diseases of childhood is complete immunization during the first year of life. There is no technological or financial reason for India not to achieve universal immunization within the next few years, despite the relatively low coverage at present. Priorities in medical education have, once again, to be established through social priorities in medical practice. In our co-operation in this in India we are often brought to a standstill by evident lacunae in knowledge of principles of immunization. It is still beset with taboos, superstitions, out-dated practices with regard to contraindications, vaccine control, schedules and recording and reporting systems.

There is no longer any argument about the mother's milk being the best food for the infant. But promotion of natural feeding, in the face of the commercial competition of artificial substitutes, will not be possible unless scientific knowledge is communicated to the community through the influential channel of the medical profession, As curriculae are slowly being reshaped on this and similar priorities in health and nutrition, the example set by the practising professional is crucial.

Preventive and promotive health care remains, for a cluster of reasons, the Cinderella of medical education and practice which is unfortunate because it is more relevant to the health of children than to other age groups. With the rapid growth of brain and body which occurs in the early years of life, and with each stage of mental and physical development having its own time and place in that process, children (specially those from impoverished families) cannot afford to fall ill and be treated only to fall ill again. Our common task is to hasten the process of gearing medical education to their support.

Role of Medical Students in Strengthening Family Planning Services in India.

By

O. P. Bhatnagar
Prof & Head, Department of Physiology, Maulana Azad Medical College, New Delhi.

ABSTRACT

A unique feature of annual conference of IAAME is the organisation of a student's seminar which gives opportunity to the future doctors to express their views on current topics in medical education. The topic for discussion at the XXIII annual conference of IAAME was "Role of Medical Students in strengthening the family planning services in India". Since this topic was of national and international importance, it generated lot of enthusiasm and interest amongst the participants and august members of the audience present. In this report, an attempt is being made by the moderator to highlight the important aspects of the presentation. The participants included Karthik Chandra and Gauri Kapoor from Lady Hardinge Medical College, Aditya Parkash and Amit Bhargava from Maulana Azad Medical College and Sandip Majumdar and Suomyo Gorai, from as distant an institution as JIPMER Pondicherry.

The participants emphasised that population growth was a major barrier to social well being and economic growth. Even at the global level—more so in the under-developed and in the developing countries, the problem of population explosion occupies the highest priority. The Government of India launched the National Family Planning Programme, in 1953. Initially it was implemented on a limited scale, but later it was placed at the very centre of plan development.

Family planning is an integrated amalgam of MCH, family planning and family welfare. An expert committee of the WHO defined family planning as those practices which help individual or couples to attain certain objectives, which are :—

—to avoid unwanted births,

—to bring about wanted births,

—to regulate intervals between pregnancies,

—to control the time at which birth occurs in relation to ages of the parents, and

—to adopt small family norm, by determining the number of children in the family.

MEDICAL EDUCATION FOR CHILD HEALTH

By: David P. Haxton
Regional Director
UNICEF South Central Asia
New Delhi.

Source: I.J.M.E. Vol.23 No.2 May-Aug.1984

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Medical Education and Pediatrics in India

BY

DR G. COELHO

Cambridge Court, Pedder Road, Bombay 26

In the last ten years the Indian Association for the Advancement of Medical Education has made its own contribution to pediatric education. At its Annual Conferences on under-graduate education, post-graduate education, and Medicine and Society, papers were discussed on pediatric education in its bearing on the main theme of the Conference. The Conferences recommended a minimum period of three months in pediatrics for under-graduates; post-graduate training and examinations in Pediatrics as a speciality; and provision of greater knowledge of pediatrics to the general practitioner.

The three-month period of under-graduate training, post-graduate teaching and diplomas and degrees in pediatrics have been accepted by the Medical Council of India and introduced by the Universities in India. Courses for general practitioners are organised by various medical associations.

Teaching Institutions have introduced separate Pediatric Departments and, barring a few, they have a Pediatrician as a Professor and as Head of the Department. Greater attention is being paid to post-graduate teaching and some institutions accept post-graduates only on the basis of full-time students.

The Universities confer the Doctorate degree and diploma in Child Health. Those who hold the doctorate take up a teaching appointment and/or enter consulting practice. The diploma holder enters a service or into general practice. Yet, few of those in service are so posted that they can use their special knowledge. The school health service does not always employ a DCH, if one is available. Similarly, there is only a low rate of employment of such pediatric trained personnel in the Primary Health Service, public hospitals and dispensaries.

For some years it will not be possible to provide diploma holders to fill vacancies in the public services. We should improve the training of the under-graduate in this subject. I intend to touch upon a few aspects of under-graduate and post-graduate training in pediatrics in India.

In advanced countries women and children have come into their own. In India though much is made of them in political talk, they are subjected to hardships in daily life. Women bear large families in great poverty, children grow-up under deprivation. If children, as a group, need more attention than the grown-up, then those, in India particularly, need this attention. They are poor, numerous, underfed, exposed to unhygienic life, die early, their growth and development is interrupted through frequent illnesses. Quite a few do not reach adolescence, a good number of those who do so are not even at the average grade. Though children form only two-fifths of the population, yet because of the greater risks they run, they need a bigger slice of our concern. If the aim of medical education is primarily to enable the recipient to serve the health of the community in India every medical student should have a greater familiarity with the life and health of our children. In the curriculum now in vogue this is not so. Correction of this anomaly is, I submit, a first call on our medical education.

It is true there has been a slow realisation of this need but the progress in the content is not in keeping with the tempo of other advances. We have been and we are still being trained in a foreign tradition. Those of us who are in the universities or

councils through which these changes can be effected are yet absorbed in older traditions, and to us child health does not seem important enough to need special consideration. The pleas of pediatricians are turned down or passed over as being partisan. When a foreign adviser comes and talks of pediatrics, of social pediatrics, of peripheral centres, then there is a bustle, more to come in line with a foreign pattern, than because it is the need of the country. If that was realised by us we would not need foreign advisers to act as catalyst.

In the thirty-six months of undergraduate clinical training only three months are allotted to pediatrics. This is often split up into two terms of six weeks each. This breaks up the continuity of teaching. In some institutions a junior batch is attached to a senior batch. If the number of teachers in the department are few it becomes difficult to allot separate sessions for these batches. Teaching them together in a single class is, I think, highly unsuitable. You cannot draw up a three-month programme; it has to be a six weeks' programme. The terms are separated by long intervals in which the student has to appear for a university examination. Therefore, it is easy for the senior batch to forget the elements they were taught in the first six weeks; in reality, they are now as new as the junior batch.

Another disquieting feature is the schedule of lectures, demonstrations and practicals which barely leave a couple of hours in the morning for clinical work. It seems the student comes into the department only to move out again.

The interns attend the pediatric department for one month and are expected to share in the routine working of the ward. If they were assigned responsible duties, even this one month could be turned into account but unfortunately, quite often, they are wasted in assisting in research programmes. Since many of them will enter general practice and some may take up pediatrics as a speciality, could not the intern be given the freedom to spend a longer period in the subject, if he so chooses. Except those that want to take another speciality all interns should spend atleast three months in this department to equip them better for their general practice. Again till more time is allotted to the under-graduate I submit we should not divide them into terms and during these three months they should have the full morning and the afternoon free to be spent in the pediatric department only.

There is a second point. Today our clinical teaching is limited to demonstrating the case material in the wards. I admit a knowledge of management of disease conditions is essential for every practising doctor but there is more in pediatrics than just curing a disease, and that is maintaining the child in normal health. For this, a student should know a normal child, his growth, development, nutritional and emotional needs. This picture is seldom presented to the student and, even if presented, it is only in a very sketchy manner. We need a few orientation. Our pediatric department should be planned to provide more time and facilities for this approach. Its main emphasis should be on this service of looking after a child in such a way that he grows into a healthy and happy child, well-protected against disease and accident and with minimal chances of an illness. A service of immunisation, assessment of physical and mental fitness and aptitudes, advice and aid to the handicapped and retarded child should be included in this. For this approach all our institutions and teachers are not yet equipped. While we can use a certain amount of international data we have to collect the material and facts of our children, scrutinise it and then absorb it in our teaching. This will take some years.

Another aspect of our teaching is that the student is exposed to mainly one stratum of society in our teaching hospitals. Seventy per cent of the patients in these institutions come from the very poor. Outside among the clientale of the general practitioner the position is reversed. The new doctor faces a different parent-child relationship in his practice. The parents of his patients are concerned even with small ailments to which he paid no attention as a student, as they were considered 'unimportant', and demand more from him than the parents in the hospital did. There

is also a lack of knowledge of the non-urban population and in India there is a wide disparity between life in the village and the big industrial town, particularly in customs and food. An Indian student should know of the life lived by the people who do not normally patronise his hospital. While reforming our people is a highly laudable objective, and children are the best material to begin this process, because of the very backward and religious attitude of our people, one has often to curb one's enthusiasm and go slow. Parents are hesitant to try anything new on their child. Even if a reform in diet or clothes is initiated in the hospital unless it is maintained it comes to nothing. For this we need the co-operation of the parents. When pumping modern knowledge and standards into the student he should also be made conversant with the foods, customs and beliefs of our people and the patterns of their resistance to change.

Pediatrics is considered a minor speciality and, therefore, there is no university examination. However, whenever a woman delivers, she delivers a baby and, in our country one woman may deliver anywhere from five to ten babies. If the process of pregnancy and the act of parturition with its hazards need so much attention from the medical student as to form a major subject of Obstetrics, should not the care of these multiple children with many years of life—Pediatrics—, be equally an important and major subject and therefore a subject for a university examination? I am not enamoured of university examinations. I, for one, would like this, single, qualifying examination, to be quickly replaced by a day-to-day assessment. But so long as it exists, the student considers the demands on his attention by any subject on the basis whether it is a subject of an university examination or not. The absence of a university examination should not make any difference to the performance of the teachers; even when it does not at the teacher's,—the giving-end, it does at the student's,—the receiving-end. The result is annoyance and frustration. Till the position is as at present, the pediatricians could organise periodic tests but as they do not carry any sanctions behind them they will soon become unreal.

For doctorates we insist on resident training. The idea behind is that the student should be able to see patients in all situations, emergency, acute, convalescence and chronic, learn to make independent decisions and be responsible for the management of patients. Having seen the material he needs time to think over it, study and discuss about it. How does our average resident fulfil these ideals? The pediatric department is generally the most crowded one. As there are few units, sometimes even only one, the emergencies have to be attended to by the same person daily, if not on alternate days. The laboratory and minor procedures consume a lot of his time. If the resident completes the routine consciously, there is very little time left, even to sleep. Study, thinking and discussions all go by the board. Now would it not be better if, in place of this one single resident in a unit, we have six or eight post-graduates among whom the in-patient, out-patient, laboratory, follow-up, special clinics and emergencies are distributed in rotation? They will be able to gather all the first-hand knowledge of the present residents and learn more as they would have wider opportunities, more time to study, think and discuss. Why should it be essential for them to reside all the 24 hours on the premises if they can maintain their attendance for the full period of their duties while they stay, perhaps more comfortably, in their own homes? This insistence on a residency is the blind transfer of an idea worked in the affluent Western institutions offering high stipends and comfortable quarters to many residents. There is a big demand for registration as post-graduates and this residency clause greatly reduces the number of seats. The quality and quantum of the performance of post-graduates depends greatly on the interest taken by their teacher in the department and in the students. Unfortunately this is our weak link. I submit that by substituting our residents by non-resident full-time post-graduates we will be able to enlarge our activities and give a better and more practical training to our teachers to be and simultaneously accept more candidates at a time.

The same defects, namely, accent on diagnosis and management of disease, a

bare mention of positive health, little contact with other strata of our society are continued in our post-graduate training because they are now trained in the same institutions. The new orientation of greater emphasis on positive health and contact with a wider spectrum of our society should be presented to our post-graduates immediately along with early changes in the structure of our departments.

The Indian Association for the Advancement of Medical Education has a part to play but the initiative must be taken by the pediatricians themselves and it is they who should pursue their drive through their Academy and Conference.

The Child's Year and Medical Training

By

H. Dhillon
Director.

B. Cowan
Professor of Medicine & Joint Director.

H.N.S. Grewal
Joint Director.

Community Health Department, Christian Medical College, Ludhiana.

ABSTRACT

The International Year of the Child and the general theme chosen by the country "reaching the deprived child" raises the question, "how many are deprived, where are they and how can deprivation be prevented"? They will certainly not "come" to programmes organised for children. However, all who are concerned with health care want them to be found and further deprivation prevented. India's medical educators want to train doctors, who will be community team leaders. India's doctors are reluctant to commit themselves to a career for which they feel untrained and in which they may become the professional "drop out". It is suggested that no time could be more opportune than the present, to make changes which bridge this gap. Medical Colleges have to take responsibility for 3 blocks. We should recognise that faculty members need training so that their contribution is effective, and make community medicine a postgraduate specialty for which the "wards" are the blocks, recognition by Medical Council of India being required for this specialty, as for any other. Training in field research, detecting target groups which are at risk such as the deprived child, is as important as any piece of laboratory based research. It is the medical teachers who can do most to effect this change by proving that they regard field research as a top priority. The simple, yet scientifically designed methodology of reaching those in need, employed by the Department of Community Medicine, Christian Medical College, Ludhiana, has been shown to be not only effective, but professionally satisfying the doctors employed in this programme.

Will India's medical graduates be able to make a significant contribution to the International Year of the Child (I.Y.C.) and to child care in the rural areas, after 1979? The general theme chosen for the year by the country is "reaching the deprived child" and the Central Department of Social Welfare proposes to undertake the preparation of a review document on the status of the child in India. This document should reveal, not only the size of the "deprived" group in India, but the etiology of "deprivation", so that effective remedial and preventive measures may be found and implemented.

Speaking at the world's first international conference on Primary Health at Alma-Ata, Russia, in 1978, the Director of W.H.O. Dr. Helfdan Mahler (1) said that nations must give top priority to allocating health resources

for the benefit of the most needy communities Even if these resources are allocated for this purpose in India, how will the needy communities be reached, their needs identified and met? The needy will certainly not come spontaneously to centres where programmes are organised for their benefit. Already, there have been many gatherings of children to inaugurate the I.Y.C. and, before the year is out, many more will share in similar programmes. However, the marasmic, the pot-bellied, the deprived, have been conspicuous by their absence in pictures of such gatherings, and they are rarely seen at clinics organised for the welfare of children.

If we in India are serious in our desire to reach those in the "weaker" section, to identify their problems and raise their standard of health, we can no longer rely on schemes which succeed only partially because their implementation has been put into the hands of those who have not been trained for the task. At the same conference, the Executive Director of UNICEF, Mr. Henry Labouisse, said that the problem was not to extend existing health services outward, but to begin building at the other end, in villages and city slums, mobilizing the people themselves to improve health standards.

Who will begin this building process in the villages of India? The Health Planners or Village level Workers? The former, having expertise and an over-view of the problem, can plan, but are inevitably remote from the areas where the plans have to be implemented. The latter, village dwellers, with excellent acceptance by the people, lack the over-view and, therefore, are unable to see any need to change situations which they have come to accept with a fatalistic attitude. Who then will bridge the gap between the planners and the people?

India's medical graduates are the obvious choice. A large proportion of today's medical graduates will find their way into the country's health service, but there appears to be some doubt in the minds of the health planners regarding the ability of these graduate doctors to meet the health needs of the community. Some have even suggested that the graduate should be "by-passed" and the responsibility for care should be put into the hands of lesser trained medical personnel. Surely this is a policy of defeatism for a country which spends so much on the training of doctors. Moreover, on the part of the doctors themselves, there is a reluctance to commit themselves to community service.

In the Republic Day issue of the Indian Express, a reference was made to the fact that the post of Paediatrician, created specially to intensify the Integrated Child Development Scheme in Nurpur Bedi, Punjab, has been vacant since the inception of the scheme three years ago. It was stated that, "in spite of this having been declared an A-grade project, by the Union Social Welfare Department, the medical officer posted invariably managed to "wriggle" out of a tenure at Nurpur Bedi".

Why should this happen? Do doctors feel that they have not been trained for this work and that they will quickly lose touch with "academic" medicine. Are they afraid that their contribution will be regarded as of less importance than the contribution of their colleagues whose careers lie in large teaching hospitals or in research laboratories? Many problems which receive a large share of the country's budget for research have much less

relevance to India's health needs today than the problem of reaching the deprived child.

With good reason, therefore, many graduates feel that, having been highly trained in scientific methodologies, they will be unable to use these skills if they do not remain in large hospitals or training centres. Their skill will be "wasted" in villages since the diagnosis of the community and plans for its treatment appear, of necessity, to be based on vague impressions, hard to accept by a graduate trained in a precise methodology. Few are familiar with the concept of a community diagnosis, still fewer trained to make such a diagnosis and, therefore they are unable to find out the community's problems and how to deal with them effectively. Moreover, they see their colleagues moving ahead towards residency programmes, postgraduate degrees and research fellowships, with financial rewards as well as promotion, academic attainment, and, for some, a reputation for expertise. It is, therefore, hard for them to contemplate a life of struggle with a community they do not understand, for which understanding there appears to be no guidelines, a people who do not value their services, and whose problems they are unable to identify. Naturally, graduates would prefer to treat patients who flock to large centres and who are willing to undergo all manner of investigations in order to obtain relief, rather than to spend their lives in uncongenial surroundings, treating patients who do not want their services and who, in fact, hold the local hakim in higher esteem.

Mobilization of a country's resources and rigorous training to a high degree of competence, is the only course open to any country when threatened by war. The toll taken by loss of child life in the socio-economically deprived section of the community, and the cost to country of the morbidity of this section of the people, however, is almost as great as the cost of war. Drawing special attention to the urgent health needs of the world's children, Mr. Labouisse said that 15.5 million infants and children, under five, will die this year for lack of health care, and 15 million will be in developing countries. "Government would have to drastically re-order their priorities" if nation-wide health care was to become a reality. This change would have to begin at the top level of Government and national leadership. We suggest that this change of attitude could result in the mobilisation of India's doctors for community health service, not as reluctant "conscripts" but eager "volunteers". Can we, the medical college teachers, show them that the challenge of reaching the deprived child is as important as finding a cure for cancer? Can we change our teaching methods so that graduates become convinced that we mean it and that this new approach is not just another "gimmick" to get them into a Primary Health Centre? Can we show them a methodology which we have tried out ourselves?

The Department of Community Health Christian Medical College, Ludhiana, uses a simple and scientifically designed methodology which leads us to all the "at risk groups". The doctors working in our programme soon learn to use it in order to identify problems, set goals and evaluate success or failure. So they learn that vague impressions are as out of place here as in a research laboratory.

In addition to family folders and a diary for each worker, there is, for each area, a comprehensive master register for maternal and child health and family planning. These are all the records that are required and, in fact, permitted since it is well recognised that a multiplicity of recording by many different people in many registers results not only in waste of time and money, but lack of clarity in definition of the goal. The data, obtained in the course of delivering comprehensive health care, provides an almost limitless pool of useful information about the community and indicates areas of maximum need. In this way, we identified the child in need, one example of an "at risk" group. They are the children of the socio-economically under-privileged, between 6 and 36 months of age, with need for special concentration on the females, especially of high birth order, more so if there is no male in the family, the mother illiterate and out working for most of the day. Neary 50% of such female children have severe malnutrition.

Is it possible for us to convince young doctors that we, the medical teachers, mean to make community medicine one of the 'prestige' specialities in India? All our assurances, however, will lack conviction unless we emphasise that a new type of training is mandatory for this speciality. No time could be more opportune than the present to make this change. Medical colleges are each taking up for care, three blocks of the District in which they are situated. What kind of care is envisaged? Those of us who have heen engaged in academic medicine, within the walls of a hospital, know that, without some training and guidance, the only care we could provide, as a faculty, will be by means of clinics in rural areas, teaching under-graduates, in a village, exactly the same kind of facts that we would have taught in the hospital ward. Some departments might take responsibility for an academic term and might even live for part of that term in the rural area. Those patients, who attend the professor's clinic might well be impressed with the seniority of his doctor, but the Government Health Service doctor will be made more aware than ever of the gulf which separates the academic from the community-based doctor. The latter has to fulfil to his communities and to his superiors certain responsibilities about which the college teachers know little.

Will visits from the staff of a medical college help him? Perhaps, but there is a possibility that these visits may even be a hindrance. There is no medical college department in the world today, which would undertake a new speciality, for example, renal transplantation, without years of preparatory training of staff, and gaining experience from earlier workers in the field before setting up such a unit. Has it ever been suggested that faculty members of medical colleges might need training before taking on responsibility for Community Health? India's health needs are great. Most are in rural areas. Few medical college staff know anything about the problems in those areas. A great opportunity is being given to colleges to make an impact on the health needs of the country. Is this not the time for the college staff to ask "what are the needs"? What does Government expect from the colleges? Who will teach us how to know a community and make community diagnosis, mandatory if we are to make effective treatment policies?" The reluctance of some medical colleges to commit themselves to Block involvement, stems froms the fact that few, experts in their own field, know what to do in a village and, if they do not know how will they teach others?

The leaders in the field of medical education must recognise the need for such training, find centres where it can be given, teachers who can give it, and formulate guidelines for the functioning of college departments in a Block. Community Medicine, practised in 3 Blocks by each medical college, should become a recognised discipline of the college, with a training programme which must have, as other departments of medical schools, the approval and recognition by the Medical Council of India. Graduates will then have the opportunity to apply for posts in residency programmes leading to post-graduate degrees in this discipline. When this happens, there will be at least some "volunteers". "Conscripts" will not become "volunteers", however, until they see that their teachers are behind them and that, instead of becoming "drop-outs" in a rural setting, they will be accorded as much, if not more, in terms of respect and financial gain than the hospital-based specialist. There must be no question of two "streams" of doctors in Blocks which are attached to colleges, one the medical officers with obligations to the Government Health Service, regarded as second-class physicians by the medical college staff, who are happy to leave the administrative problems to the former. The scheme will not work until the Government and college staff function as a team.

India has inaugurated the I Y.C. with many laudable aims. Bold and drastic reorganising of priorities is needed so that Indian doctors are channelled into the immense task, not only of identifying and rehabilitating those deprived of health, including children but preventing deprivation by medical and social change.

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Child Welfare Centre A Concept in Undergraduate Pediatric Education

By

Harjit Singh

&

P. S. Bhatt

Department of Pediatrics, Medical College and Hospital, Rohtak, Haryana.

Introduction

There are over 10 milllion severely malnourished children the world over and India one of the major contributors to this ominous reality. Closely linked to malnutriton are childhood infections and diarrhoeal disease, and these together account for the appalling morbidity and mortality rates. While all medical educationists are unanimous on a need-based undergraduate curriculum (Duraiswamy, 1970; Srivastava, 1973), no concrete steps have been taken in this direction, with the result that the training of our 'basic doctors' pertaining to child health care remains far short of the desired standards inspite of the fact that approximately 40 per cent of patients in general practice belong to the pediatric age group.

It has been stressed that highly specialized nature of work done in the hospital militates against training for medical practice in the community (Patel, 1973; Wahi, 1973). This has been an important factor in producing a severe imbalance in the availability of health and medical resources between rural and urban areas. There is, thus, an urgent need to re-orient undergraduate pediatric education in a manner so as to make it more rational and practically more useful to the requirements of a basic doctor. The Medical Education Committee of the Govt. of India (1969) recommended that the internship training should not be confined to the teaching hospitals alone but should include a supervised training at the primary health centres. To evolve an effective approach in this direction the priority areas of child health care at the primary level must be defined. The W.H.O. Ad Hoc Committee on pediatric curricula summarized the objectives of undergraduate training thus :

> "The object is to ensure that the student at the end of pediatric posting has a firm grasp of the major principles of child health necessary for a doctor working in a Health Centre or in general practice. His learning will be concentrated on growth and development, on prevention and effective care of common illnesses of infancy and childhood and on the relationship of environment to health".

Infants and small children in the age group of 0 to 5 years constitute 15 per cent of the country's population and mortality is 4 to 5 times compared to the developed countries. In an effort to provide basic health care to this vulnerable segment a concept of Undor-Fives' Clinics originated (Morley, 1966, 1968 and 1973 ;King. 1971 ; Cutting, 1972). These Clinics require minimal staff, involve active participation of the paramedical staff and aim

at a comprehensive approach in the form of curative, preventive and promotive care. Doctors who could be most involved in these clinics are those working in the Primary Health Centres or attached to Maternity and Child Welfare Centres, However, few doctors working in these situations have either the comprehension or the practical background to properly utilise the available resources and paramedical staff to best advantage.

Diarrhoeal disease due to infections, faulty feeding techniques, unhygienic living conditions and rampant malnutrition is still the number one killer in early childhood years. Operational research all over the world has demonstrated that patients are unlikely to travel more than 5 to 8 Km to seek medical care and for the toddler who needs to be carried, the distance may be reduced further. Therefore, the probability of rural population seeking advice in towns and bigger city hospitals is meagre, Establishment of 'Rehydration Therapy Centres' in rural areas has been recommended (Sack, 1972). The selection of a suitable site which will be heavily used is very important. Such a site, ideally, should be readily accessible to the faculty members who would serve as supervisors, while most of the responsibilities can be delegated to Interns and paramedical personnel.

Rao (1973) pointed out that the present unsatisfactory situation of rural health services is explained, in addition to lack of resources, by the failure to use auxiliary and paramedical personnel through proper delegation of responsibility, administrative inexperience of the medical officers and inadequate and faulty education of health personnel. He laid down the following guidelines to achieve comprehensive health delivery to the masses :

(i) To implement a health team concept, training and education of all workers should be together as far as possible.

(ii) The curriculum should be so designed as to meet the social and educational objectives and needs of the society.

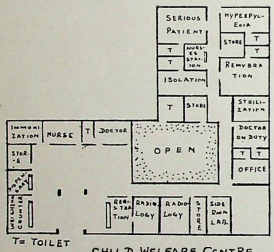
To this one may add that training programme should include a rural setting as the place of instruction.

Mobile training-cum-service hospitals were conceived as a need-based programme for providing training in comprehensive medicine to the interns and undergraduates in rural areas under supervision of the Medical College staff. There have been several functional variants of this scheme. The authors are familiar with one in which they have participated during the last five years. This 'Mobile Hospital' is being run by the Medical College, Rohtak, and provides intensive comprehensive care in all specialities for a period of 3 to 4 days (active phase) followed by a two week consolidation phase. Approximately 10,000 patients get medical benefit. Only interns participate at the undergraduate level and professional leaning opportunities available to them at these camps are difficult to assess. At best these camps provide 'instant' medical aid to the masses for a transitory period of time. Organisation of these camps involves an enormous cost, which is perhaps a luxury at the present point in time. Requisitions of each camp is estimated to cost Rs. 80,000/- to Rs. 100,000.

Child Welfare Centre :

A Child Welfare Centre (CWC) has been conceived incorporating priority child health care areas. These Centres should be established at the Primary Health Centres attache

to Medical Colleges, so that the interns and paramedical staff can gain a first hand experience in working as a team in providing basic health care to the children. The design of CWC (Fig. 1) incorporates the basic design of the Under-Fives, clinic, with addition to provide for the extended needs of the Rehydration Centre. Applied Nutrition



CHILD WELFARE CENTRE

Programme and facilities of managing relatively serious illnesses with minimal resources. Staff inputs, establishment cost and recurring expenditure are shown in Tables I, II and III. Annual expenditure on staff and equipment is estimated at Rs. 3 lacs, which would mean an additional expenditure of Rs. 2,500/- per intern. Each intern would spend, out of his three months' posting in the Health Centre, one month at the CWC, where he would be expected to work directly with the paramedicos with minimal supervision and amenities A graduate thus trained would be better equipped and confident in dealing with the health problems of community's children when he works in the field.

Comments:

Social health goals will vary from country to country in accordance with social and economic development. But an effective delivery of health care in any society must include total care of children including nutritional guidance to ensure effective utilization of locally available food, immunization against major infections and elementry curative care.

Economy and health manpower resources would always be the deciding factor in health care delivery. Developing countries have abundance of neither. Effort, therefore, has to be made to devise the most economical solution. With limited number of qualified doctors available to man the Primary Health Centres, an effective utilization of paramedical staff becomes essential. The extent of involvement of paramedical staff depends upon the administrative skill and experience of the medical officer in team leadership.

A fresh graduate exposed to the community for the first time finds it difficult both to weave a well-knit team with effective participation of the paramedical staff as well as to provide the child health care requirements of the community. A period of one month which the Intern would spend at the CWC is aimed at giving him a first hand experience in both. He would, during this period, work in association with paramedical staff and have the primary responsibility in providing primary health care to children under minimal supervision of senior staff.

One is aware of the fact that with economic progress the quality of health care even in the developing countries would improve. Afterall health care is ever-changing and must remain

under constant review. It is inevitable thus that the role of CWC would change in times to come. But whatever the situation, the child would always get top priority in health care and the Child Welfare Centre would serve as a constant reminder to the medical graduate of his responsibility to the community's children.

TABLE I

Staff Input

A.	Supervisory	(1) Pediatric Consultant (2) Consultant, Preventive and Social Medicine	) Medical College
B.	Resident :	(1) Registrar Pediatrics	...Two
		(2) Staff Nurses	....Two
		(3) Radiographer	...One
		(4) Clerk-cum-storekeeper	... One
		(5) Laboratory Attendents	...Two
		(6) Bearers	...Two
		(7) Sweepers	....Six
C.	Trainee :	(1) Interns	...Ten
		(2) A. N. Ms.	...Six

TABLE II

Investigative Facilities

1. Routine Hematology
2. Urine and Stool examination
3. Arrangements for Microscopy, Gram staining, Zeil Nielson Staining and Albert's staining (for C. Diphtheria)
4. Radiology : Chest and Abdomen
5. CSF for Cytology, Protein and Sugar

Equipment :

1. Microscope ...One
2. Hand Centrifuge ....One
3. Electric Centrifuge ....One
4. Routine Laboratory Glassware and Chemicals

TABLE III

Establishment Cost

1.	Building	Rs. ...	7.00 lacs
2.	Equipment	Rs. ...	3.00 lacs
3.	Total	Rs.	10.00 lacs
Recurring Expenditure :			
	(A) Salaries	Rs.	1.00 lac
	(B) Drugs, Equipment, etc.	Rs.	2.00 lacs

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Concept Of Preventive and Social Pediatrics

by

(Miss) S. Gupta, FRCP, DCH.

Professor & Head of the Deptt. of Pediatrics, Maulana Azad Medical College & Associated, Irwin & G.B. Pant & Hospitals, New Delhi-1.

The purpose of Preventive and Social Pediatrics is to provide each child optimum opportunities for optimum physical, emotional and intellectual growth and development. Such opportunities are not considered luxuries today or the right of a few previleged ones, but are necessities of child health care service.

The idea of preventive pediatrics is not new. The main concern of all parents is for the welfare of their infant growing from one of the deepest instincts in all animal species, nourishment, protection against heat and cold, and warning of danger constitute the primitive form of prevention and advances that have taken place are due to handling down from generations to generations of actions and methods found by experience to be the most efficacious.

Pediatrics being perhaps the most comprehensive and complete branch of medicine, it was only natural that several modern trends in medicine originated or developed in its realm; preventive pediatrics is not only indebted to many eminent pediatricians for the establishment of a large part of its formation, but as child health science, it has become completely integrated with the diagnostic and curative aspects of child medicine.

The emergence of Social Science with their improving methods has opened up new approaches to the study of medically important aspects of human society, and of its organised life. Indeed there seems to be no less a reason for a physician to know about the human community life than about the life of bacteria and viruses. For these reasons medicine is sometimes called a social or socio-biological service.

A study of old system of Indian medicine reveals that 'Susruta the senior' devoted two chapters to Preventive Practice in his treatise on children called the 'ultratantra'. These chapters devoted to (a) nursing and healthy upbringing of infants and children and (b) purification and improvement of breast milk found deficient in quantity and quality, brings forward the fact that prevention was practised even in the ancient medical system of India.

In the present day medicine, preventive and social medicine had its origin near about the same time when methods to sterilize milk were devised. Later milk banks and dispensaries were started (1894). Well baby Clinics were started around the same time as well (1892). Then came the era af Pasteur and Jenner. Mass innoculation against small-pox became popular in early 20th centuary but the final achievement in this field could be called the post world war I era when M.C.H. bill was passed by the British parliament which made it obligatory for the state to look after the mother and her new born baby. This was especially important for India since British rules applied to us and passage of this rule was suceeded by the starting of a number of M.C.H. Centres in this country. The important realization that children and particularly infants are not merely manikins and they differ anatomically, physiologically, pathologically and immunologically from adults did not come till some people devoted time to the child and its ailments towards the close of 19th centuary. Since then pediatrics has developed very considerably, the study of heredity and environment have led the pediatricians to extend their activities not only to the moment of conception, but even before that up to post puberty when reproduction starts.

The practice of pediatrics may be divided in three branches.

a. *Clinical Pediatrics*: dealing with the sick child or child affected by trauma in the widest sense of the word, and hence deals with etiology, pathology, treatment etc. b. *Preventive Pediatrics*: is concerned with all ills physical and mental which may threaten the child and secondly with all endeavours aimed at safeguarding for each child optimum growth and helping him in every respect to reach the maximum of his potential abilities. c. *Social Pediatrics*: Comprises the whole group of collected endeavours favouring the young age. It is difficult to isolate preventive from social since they are often bound upto the point of fusion.

What then is the sphere of preventive and social pediatrics? Below are listed a number of important considerations:—

1. Protection of child against infection: By this, I mean not only specific immunization against disease for which specific immunizing procedures are avilable but also infection with parasites like round worm, hookworm etc. Streptococcal infections and repeated respiratory infections are also very important since they may lead to permanent cardiac or renal damage and hence health education and other general measures to improve general standard of living, water sanitation etc. are important.

2. Dietetic Errors and Insufficiencies:—Provision of balanced diet including proteins and vitamins and help in terms of grow more, consume more, and train more para medical nutritional worker for health education and hygiene of good stuffs available locally as far as possible. Many of these insufficiencies are due to ignorance, customs and habits rather than due to non-availability. The importance of proteins in the diet of vulnerable group cannot be overemphasised in developing countries when one considers its impact on brain development right from foetal life onwards.

3. Noxious effects of social environments: In this, I should like to include serious psychological impacts due to deprivation of maternal care, broken families, extreme poverty and also to include the effects on abandoned and neglected children. Besides this to counteract the risk which threatens the child in a morally abnormal family. The last named implies not only protection of the child against juvenile delinquency but more than that positive steps to avoid mental trauma and antisocial orientation from a very early age.

4. Protection against accidents involving the security of the child on the road, at home, and at work. This last would go a long way in avoiding morbidity and mortality in no small measure.

5. Protection against congenital malformation and hereditary defects: Much is still shrouded in mystery as regards congenital malformation, but avoidance of the known factors, like infections affecting the foetus, maternal radiation etc. is important. Prevention of obstetrical accidents, and provision of good antenatal, natal and postnatal care are important steps in this direction. Genetic advice against consanguinity should be a regular feature in prenatal clinics. This later is not only the field of obstetricians but pediatricians must take responsibility of the foetus from conception onwards.

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7. Legislation and observance of laws relating to children: are absolutely essential in preventing child labour, both in domestic as well as in commercial circles, further laws relating to adoption, provision of basic facilities like education, nutrition etc. are also important.

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Now once we have defined the scope the next step would be planning for achieving these. The basic services needed are, *well baby clinics*, both in urban and rural areas. It is unnecessary to elaborate on their importance and I shall not dwell on this familiar topic except to mention their value in health education of the mothers and the family, and in impressing about the preventive services from an early age.

School and University health services which should supervise the child from a very early age with full time staff are indispensible for the establishment of a sound preventive pediatric services. Sex education, health and hygiene are important aspects to be impressed and explained, and thirdly establishment of a *national organisation* at the level of Central Government, State Government etc. to deal with all aspects of administration and planning pertaining to mothers and children's health.

Control of environment eventhough difficult should be attempted as far as possible especially in children with poor social backgrounds, and handicapped children.

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So, it becomes necessary for anybody wishing to practise pediatrics that he or she should have the 'social sense', besides his professional capability. By this I mean the capacity to understand others, the capacity to guide and instruct. Preventive and social pediatrics must permeate the curricula of all future teachers, administrators, town planners, community workers, agriculturists and all child health and care workers, for whom it is essential to know all aspects both physical and mental health of the child entrusted to them.

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The emergence of abortion in recent years first as an increasingly accepted therapeutic modality, and now as a legally sanctioned procedure with added humanitarian and eugenic justification poses an immediate and compelling challenge to institutions engaged in the training of health workers at all levels. Opinion surveys, such as that conducted by Israel in Bombay in 1969 indicate the wide variance of attitudes of physicians as to the proper place of abortion in medical practice. Clearly, we face an educational task, not only at the undergraduate level, but also in the re-education and continuing education of those who were trained in an era in which abortion was virtually taboo and medical practice generally isolated from the social concerns expected of today's community minded health worker. Not only the philosophy, but also the technology of abortion has undergone revolutionery change calling for training of those who now face a rapidly growing demand for this procedure in the new techniques of suction-aspiration, amniocentesis, and the management of the inevitable complications of induced abortions.

Fortunately, the need to impart the necessary judgement and skills required for the care of growing numbers of women requesting abortion coincides with the new emphasis given to reproductive biology and fertility control as high priority subjects in medical education. Last year's tenth Annual Conference of this association[2] is testimony to this emphasis. As the Medical Colleges address themselves to needed modifications of curriculum, training in management of problem pregnancies will hopefully reflect the interdepartmental coordination that the technical, sociological, and psychological aspects of abortion care require.

In the 1969 survey of the curricula of ninety three medical colleges in India reported by Rice,[3] practical experience in specific Family Planning related procedures was reviewed. Most colleges did not allow students to insert IUD's, deferring this experience to the internship year. Very few permitted assists in tubectomy and experience in vasectomy, with a single exception, was not regarded as an undergraduate requirement. Clinical experience in abortion was not surveyed in these question-

* Paper Presented at the XI Annual Conference of IAAME at AFMC, Poona, Feb'72.

Concept Of Preventive and Social Pediatrics

by

(Miss) S. Gupta, FRCP, DCH.

Professor & Head of the Deptt. of Pediatries, Maulana Azad Medical College & Associated, Irwin & G.B. Pant & Hospitals, New Delhi-1.

The purpose of Preventive and Social Pediatrics is to provide each child optimum opportunities for optimum physical, emotional and intellectual growth and development. Such opportunities are not considered luxuries today or the right of a few previleged ones, but are necessities of child health care service.

The idea of preventive pediatrics is not new. The main concern of all parents is for the welfare of their infant growing from one of the deepest instincts in all animal species, nourishment, protection against heat and cold, and warning of danger constitute the primitive form of prevention and advances that have taken place are due to handling down from generations to generations of actions and methods found by experience to be the most efficacious.

Pediatrics being perhaps the most comprehensive and complete branch of medicine, it was only natural that several modern trends in medicine originated or developed in its realm; preventive pediatrics is not only indebted to many eminent pediatrics as for the establishment of a large part of its formation, but as child health science, it has become completely integrated with the diagnostic and curative aspects of child medicine.

The emergence of Social Science with their improving methods has opened up new approaches to the study of medically important aspects of human society, and of its organised life. Indeed there seems to be no less a reason for a physician to know about the human community life than about the life of bacteria and viruses. For these reasons medicine is sometimes called a social or socio-biological service.

A study of old system of Indian medicine reveals that 'Susruta the senior' devoted two chapters to Preventive Practice in his treatise on children called the 'ultratantra'. These chapters devoted to (a) nursing and healthy upbringing of infants and children and (b) purification and improvement of breast milk found deficient in quantity and quality, brings forward the fact that prevention was practised even in the ancient medical system of India.

In the present day medicine, preventive and social medicine had its origin near about the same time when methods to sterilize milk were devised. Later milk banks and dispensaries were started (1894). Well baby Clinics were started around the same time as well (1892). Then came the era af Pasteur and Jenner. Mass innoculation against small-pox became popular in early 20th centuary but the final achievement in this field could be called the post world war I era when M.C.H. bill was passed by the British parliament which made it obligatory for the state to look after the mother and her new born baby. This was especially important for India since British rules applied to us and passage of this rule was suceeded by the starting of a number of M.C.H. Centres in this country. The important realization that children and particularly infants are not merely manikins and they differ anatomically, physiologically, pathologically and immunologically from adults did not come till some people devoted time to the child and its ailments towards the close of 19th centuary. Since then pediatrics has developed very considerably, the study of heredity and environment have led the pediatricians to extend their activities not only to the moment of conception, but even before that up to post puberty when reproduction starts.

The practice of pediatrics may be divided in three branches.

a. *Clinical Pediatrics*: dealing with the sick child or child affected by trauma in the widest sense of the word, and hence deals with etiology, pathology, treatment etc. b. *Preventive Pediatrics*: is concerned with all ills physical and mental which may threaten the child and secondly with all endeavours aimed at safeguarding for each child optimum growth and helping him in every respect to reach the maximum of his potential abilities. c. *Social Pediatrics*: Comprises the whole group of collected endeavours favouring the young age. It is difficult to isolate preventive from social since they are often bound upto the point of fusion.

What then is the sphere of preventive and social pediatrics? Below are listed a number of important considerations:—

1. Protection of child against infection: By this, I mean not only specific immunization against disease for which specific immunizing procedures are avilable but also infection with parasites like round worm, hookworm etc. Streptococcal infections and repeated respiratory infections are also very important since they may lead to permanent cardiac or renal damage and hence health education and other general measures to improve general standard of living, water sanitation etc. are important.

2. Dietetic Errors and Insufficiencies:—Provision of balanced diet including proteins and vitamins and help in terms of grow more, consume more, and train more para medical nutritional worker for health education and hygiene of good stuffs available locally as far as possible. Many of these insufficiencies are due to ignorance, customs and habits rather than due to non-availability. The importance of proteins in the diet of vulnerable group cannot be overemphasised in developing countries when one considers its inpact on brain development right from foetal life onwards.

3. Noxious effects of social environments: In this, I should like to include serious psychological inpacts due to deprivation of maternal care, broken families, extreme poverty and also to include the effects on abandoned and neglected children. Besides this to counteract the risk which threatens the child in a morally abnormal family. The last named implies not only protection of the child against juvenile delinquency but more than that positive steps to avoid mental trauma and antisocial orientation from a very early age.

4. Protection against accidents involving the security of the child on the road, at home, and at work. This last would go a long way in avoiding morbidity and mortality in no small measure.

5. Protection against congenital malformation and hereditary defects: Much is still shrouded in mystery as regards congenital malformation, but avoidance of the known factors, like infections affecting the foetus, maternal radiation etc. is important. Prevention of obstetrical accidents, and provision of good antenatal, natal and postnatal care are important steps in this direction. Genetic advice against consanguinity should be a regular feature in prenatal clinics. This later is not only the field of obstetricians but pediatricians must take responsibility of the foetus from conception onwards.

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UNDERGRADUATE PEDIATRIC EDUCATION IN INDIA

K.K. Kaul

Teaching and services of no other discipline of vital national importance and priority have suffered as much as that of child health. Despite much lip service, concern about health of children and appreciation of its direct relationship to Maternal and Child Health/Family Planning, child health enjoys a lower priority in both services and training of a basic physician. For instance, in hospitals distribution of beds and consequently of staffing, drugs and equipment continues to remain in striking contrast to the sick child population needing curative services. Not more than 10-15% of total beds are allotted to children's wards in spite of over 40% population comprising children below 14 and higher sickness rates in them. In a routine day's work of a general duty medical officer, 40-70% of all patients are children below 14 years, yet only 10% of the total clinical teaching time is allotted to pediatrics(1,2).

Training and assessment of students in child health have suffered for a number of reasons. Historically, medical education in India, as in some neighbouring countries, was founded upon the British pattern, but remained nearly static after independance(3). It has not undergone any substantial change in response to the needs and aspirations of the masses. Older and established disciplines continued to exert their pressure and consequently delayed the progress of pediatrics—a relatively new subject and considered then a branch of internal medicine at par with system specialities, such as cardiology and neurology. As late as 1955, no department of pediatrics in the country was autonomous. Indeed the first chair in pediatrics was established in 1948, by 1965 fifty two, by 1968 sixty four and by 1971 seventy five departments were functionally independant(4) (Table). Even until recently, not all departments of pediatrics enjoyed autonomy. A glaring example in this regard is a premier postgraduate institute whose department of pediatrics remained for long a subdepartment of internal medicine. Another major factor that adversely influenced the development of undergraduate education in child health was the rapid expansion of medical colleges from 17 in 1947 to over a 100 at present. This expansion together with lack of facilities for postgraduate education in pediatrics in the initial stages resulted in considerable difficulties in provision of suitably qualified and trained teaching staff to departments of pediatrics. With increase in the number of colleges the student intake in each college also increased(5). Since major efforts were chanelled into expansion, the course content and curricular organization did not undergo any extensive revision to keep pace with social change and the

TABLE—*Number of medical colleges & autonomous department of pediatrics after independance*

Year	No. of medical colleges	No. of autonomous Deptt. of Pediatrics
1947	17	—
1955	32	4
1965	85	52
1968	92	64
1971	100 (Aprox)	75

From the Smt. Patel Pediatric Centre, Govt. Medical College, Jabalpur 482003 (MP)

resultant changing health needs of vulnerable populations, particularly women and children. Most departments of pediatrics are directly involved in national health programmes including MCH, EPI, Post partum programme, I.C.D.S. etc, to name a few. Together with responsibility for routine teaching and services it amounts to a heavy work load for a small number of faculty members not exceeding five in an average medical college, yet proposals for expansion of pediatric departments do not receive the consideration they deserve.

Old curricula in most medical colleges in the country suffer from the traditional separation between pre-clinical and clinical teaching and the expectation from the student to assimilate a large amount of factual information. The teaching of pre- and para-clinical sciences generally remains confined to the fully grown and mature adult as though what applies to an adult could automatically apply to a child on a smaller scale. Teaching of pediatrics has remained heavily curative oriented and institutional. Severe constraints of time have prevented introducing to the student the bare concepts of child health particularly in the area of growth and its variations and its determinants from birth to adolescence, preventive and promotive child care, economic cultural and demographic factors influencing child health and the need for education of parents, teachers, paramedical staff, social workers and others towards better ultimate health care of children. These aspects of teaching require to be done with the agreement and cooperation of other departments especially Obstetrics and Preventive & Social Medicine. Inter departmental cooperation is being increasingly recognised as essential for effective teaching and for setting a necessary example to medical students. Besides, the total teaching should be coordinated and not all teaching need be done by those working in the department of pediatrics(5,6).

The inclusion of pediatrics in the final MBBS examination by the Medical Council of India continues to face severe opposition from certain sections of the college medical faculty, some members of which take greater pride in 'loyalty' to their own subjects than to medical education at large or merely tread the path of least resistance by opposing any change. It is argued that introduction of pediatrics (or other essential matter relating to other subjects) will increase the burden of the already over-burdened student. The answer to this is not exclusion of clinical disciplines essential to the graduate doctor in conducting his day to day practice but indeed inessentials in the vast undefined course that have for long harassed the student in established disciplines like internal medicine and surgery. Medical science is ever expanding and unless the course content of each subject particularly internal medicine and surgery is clearly defined (not merely as a 'syllabus' but a clearly spelt out course-content) and the student is made aware of essentials that he must know and the skills he must be able to perform, his 'burden' will never cease to grow. The Medical Council of India, universities and Medical Faculties need to engage in the exercise of removing what is unnecessary and preparing precisely defined curricula for each subject based on essential requirements of a general duty medical officer in his daily medical practice. This will doubtless focus the students' attention to essential knowledge and skills resulting in better performance not only in the examination but indeed also in general practice. If this fact is appreciated and put into practice there should be no difficulty in implementing the revised directives of

Medical Council of India relating to student assessment. The role of the graduate doctor in providing health care to children as a priority has recently been appreciated by Medical Council of India. As a result the requirements of the undergraduate curriculum have been revised and adopted in 1977(7) to include pediatrics at the final MBBS examination as a section of internal medicine and to provide 3½ months clinical posting in the children's wards. It is unfortunate however that inspite of clear directives of the Council, which have become an act of Parliament, Medical Faculties of universities have been slow to implement them thus delaying or denying the nation's over 270 million children their right to appropriate health care through medical graduates properly equipped to provide such care.

In 1970, 90% institutions provided less than 300 hours of teaching time for pediatrics and it seems the situation has not since changed substantially. A foreign visiting team that came to India in the 50's stated that the undergraduate curriculum seems to have been prepared as if to deliberately belittle it in the eyes of the student. A WHO Committee in 1957(8) agreed that without a minimum of 300 hours it was impossible to do justice to a pediatric curriculum. For adequate coverage more hours were thought necessary and an allocation of one quarter of the clinical time to pediatrics was envisaged as a reasonable proportion. These requirements are nearly met if the directives of the Medical Council of India providing 3½ month's clinical posting are implemented and at least 50 lecture hours are allotted to pediatrics in the undergraduate course.

The Ministry of Health Government of India and WHO have been consistently working in collaboration towards strengthening of pediatric education since the late sixties (9-12). To that end WHO has supported the work of a committee of medical educators which has studied the teaching of child health and has published an experimental curriculum suitable for use in medical colleges in India (12,13). The first objective of the 'Ad hoc' committee on education and training in Pediatrics in designing the curriculum was to see that it has relevance to the needs of the country and to the development of medical services. It was clearly realised that such a curriculum must necessarily observe realities of conditions and work within the limits and constraints existing in teaching hospitals in the country. The experimental, 'remodelled' curriculum thus prepared took into account the heavy clinical work in the wards and the OPD, its workability in an average sized department of pediatrics with material resources available in such a department, acceptability to the college teaching faculty without disturbing the overall curriculum and working within the directives of Medical Council of India. This remodelled curriculum has been operating at two medical colleges in the country(13) which serve as demonstration centres for this curriculum. A WHO fellowship scheme enables professors and senior teachers of Pediatrics from other colleges to observe and participate in teaching this remodelled curriculum at the two colleges. From available reports this has been a useful experience both for the teaching staff of the two centres and over twenty professors who have so far participated in teaching at these centres.

Since MCH care at the block (PHC) level is delivered by the same doctor, it is necessary that every student should observe how such care is delivered by the PHC. Such an opportunity arises during internship when the intern is resident for a period of 3 months in a rural field practice

area attached to the medical college. To this end a curriculum has been developed by a WHO ad hoc committee and is in operation at two centres in the country(14, 15) where departments of Social and Preventive Medicine, Obstetrics and Pediatrics are jointly responsible for the working of the curriculum. Fellowships available from the WHO on nomination by Government of India enable senior teachers of these three disciplines from other colleges to visit these demonstration centres for 6 weeks and participate in teaching the curriculum as a team.

A long felt need in the field of pediatric education in India has been suitable text books for students and practitioners available at low cost, dealing with prevention as well as cure, descriptive of common diseases and symptom complexes, informative on nutrition, growth and development and related to economic facts, descriptive of practical techniques in common use, suitably illustrated and descriptive of the clinical approach to the sick child and his parents. A handbook on child health care based on these parameters is under preparation by the WHO and is likely to be available soon. Several books written by Indian authors are also now available and one by the Indian Academy of Pediatrics is under preparation. Many more books on various aspects of Pediatrics and relevant to the national needs are required to enable students and practitioners a wider choice of subject matter.

With no further increase in number of medical colleges it is now possible to strengthen and improve undergraduate medical education generally. Government funds and assistance from UNICEF/ WHO have enabled provision of audio-visual aids to institutions. While these aids are very useful it is necessary that teachers understand the skilful use of these aids and their maintenance. Utilising them merely because they are available without careful selection and planning can be worse than a carefully prepared lecture delivered without such aids.

As stated earlier, inadequate teaching time, lack of appropriate curriculum planning and the absence of student assessment in Pediatrics at the final MBBS examination have turned out medical graduates poorly equipped in the health care of children(15). Refresher courses and continued education in child health for those who have been in practice therefore assume an importance greater than that of any other clinical discipline. Planners of medical education and health services need take note of this urgency.

In conclusion health services for children and Pediatric undergraduate education have thus far, undergone a painfully slow metamorphosis to the detriment of proper development of human resource material and of consequent national productivity. These errors and omissions need to be remedied and personel gains sacrified in the larger National interest by those responsible for implementing policies in medical education.

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SOCIAL PEDIATRICS AND INTERDISCIPLINARY APPROACH TOWARDS COMMUNITY AT HYDERABAD (A.P.)

YOURAJ CHANDRA MATHUR*

Clinicians throughout India are now fully aware of the enormous responsibility due to the 2.5% growth rate resulting in an annual addition of above 13 million babies in this country. As Pediatricians, we are responsible for the health aspects of the community which we are serving and therefore the aim should be to minimise the mortality and morbidity amongst children and also to lay down priorities in the programme. No doubt, limitation of the family is extremely important but it is quite vital for all health workers to also see that the children who are born should survive longer and grow into a healthy adult. An analysis of the mortality figures shows that 40% of the total deaths are in the pediatric age group and a further break down shows that 31% of the deaths are in children under 5 years. 16% die in the neonatal age group and another 15% die before they reach the age of 5 years. Therefore unless this is efficiently looked into, on a mass scale, the workers cannot get convinced for family planning, only on the demographic, social and economic arguments, specially the less educated ones.

Problems

Before planning an effective health programme for any group of population it is imperative on the part of a clinician to know the mortality and morbidity pattern of the community. This can be done by means of hospital data or much better by a door to door survey. This will give the top ten diseases and therefore it will help in carefully planning preventive programmes in the community. Like all the developing countries of the world, in India too, nutritional problems, gastroenteritis, respiratory problems and infectious diseases top the list. There is a little bit of regional variation in our country but by and large similar problems are confronted by health workers.

The Institute of Child Health, Osmania Medical College, Hyderabad has undertaken the task of reducing the mortality and morbidity by the following ways.

Prevention of Infections

1. Immunization.
2. Nutrition and vitamin supplements.
3. Nutrition and health education.
4. Environmental sanitation.

These four ways of preventing infection in the community is done by the Department of Social Pediatrics. This team, headed by Addl. Professor of Social Paediatrics, consists of :—

1. Asst. Professor of Social Obstetrics, Postgraduates, Lab technician, Health Visitors.
2. Asst. Professor of Social Pediatrics, Nutritionist, Postgraduates doing M. D. & D.C.H., Health Visitors.

* Addl Professor of Social Paediatrics, Institute of Child Health, Hyderabad.

3. Asst. Professor of Social & Preventive Medicine, Health Educator, Social Worker, Postgraduates, Interns & Undergraduates.

4. Local resident staff of the Primary or Rural Health Centre or Institute.

Thus, this team of Social Pediatrics has all the three important disciplines—the S. P. M., Obstetrics and Pediatrics, and through this team an interdisciplinary approach has been planned in the following three areas :—

I. RURAL :—Chevella block under the Indo-Dutch Project for Child Welfare.
Pattancheru under the Osmania Medical College.

II URBAN :—Puranapul Centre - Under the Municipal Corporation of Hyderabad.

III. Institute of Child Health, Niloufer Hospital, Hyderabad.

This team works in all these areas during the week. Background and baseline data for all the areas was collected before the actual action programme was started.

The Indo-Dutch Project for Child Welfare — At the Chevella block under the Indo-Dutch Project for Child Welfare, an eight years programme has been started in January, 1970. Initially, a survey of the entire block was done by the survey team from Social Pediatrics Department and the National Institute of Community Development. This survey by SPM Asst. Professor and his team and the N. I. C. D. was carried out to know the population structure, beliefs and taboos, child rearing practices, socio-economic conditions, cultural and feeding practices, morbidity and nutritional assessment and environmental factors. After such an intensive survey and after studying the community, the maternal and child health team started their action programme. Weekly clinics are conducted wherein the mothers and children are examined for whole day. During the first year, only six villages within 3 miles radius of Shankerpally were selected. The total child population under six years was about 2,000 and expectant mothers were 500. Thus, the team concentrated in the I year on preschool children and pregnant mothers. The field unit provided the evaluation of the programme. In the II year 2 more villages were added to Primary Health Centre, Shankerpally and two more sub-centres Maharajpet and Dhobipet were opened to cover the Northern part of the Chevella block. The whole of the Northern part of the block is covered now. Since it is an eight year project, every two years the team will move to other main centres. Training is given to the local doctors, health visitors and other paramedical personnel. It is expected that in 7 years time, the mortality and morbidity will be brought down.

Emphasis is on the total care of the child. Good and efficient curative treatment is given to all children to gain the confidence of mothers and to minimise admissions in hospitals Every child on arrival is given a token number and a weight card. The child passes through six places wherein he is weighed, height and circumference taken, examined, immunised and then he goes to nutrition and health education clinic and finally for getting drugs if required. Thus all aspects of child health are covered. There has been a good community response to protein supplements. The villagers are themselves preparing the protein packets with bengal gram and groundnuts. The production of ground nut has increased by 3 times

Anthropometrically, the children have attained better heights and weights and their nutritional status is very good. Due to this comprehensive care, the mothers who were previously reluctant for family planning measures are now voluntarily and willingly coming forward for tubectomies. The incidence of neonatal tetanus has come down due to immunisation of the mothers with tetanus toxoid. The morbidity pattern has changed. Protein Calorie Malnutrition, which was topping the list of diseases, has come down to third place now. The local dais who were previously conducting the deliveries at home are now trained and they have thus brought down the neonatal and maternal deaths. The survey revealed that every 3rd child in the preschool age group has vitamin A deficiency and therefore all children in this age group are now receiving Vitamin A supplements. Two lakh units of vit. A are given every 6 months for 3 such doses. Evaluation is done, time and again, about the whole programme and its benefit to the community. Thus, this combined team of obstetrics, pediatrics and social and preventive medicine has started paying its dividends. Andhra Pradesh is the first State in our country to start a department of Social Pediatrics and it has already shown its good results in the community. Therefore even if a separate department of Social Pediatrics is not formed, it is our plea that similar programme can be undertaken throughout the country by full co-operation of all these three departments.

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ROLE OF SOCIAL PEDIATRICS IN THE INTERDISCIPLINARY APPROACH TO COMMUNITY HEALTH CARE

AJIT KUMAR*

The role a pediatrician can play in community health is very important and it is interesting to note what he has been doing all these years with regard to the problems and how they could be solved with the close co-operation of other departments.

All along, the emphasis in medical care has been to treat the physical illness of the individual patient. Advances in public health, psychiatry and social sciences have given wider outlook of comprehensive medical care in contrast to fragmented specialised one. Yet this concept of total care has not been widely practised, perhaps because 'laboratory medicine' has paid more dividends and prestige to the research workers. The pediatrician must be able to discuss the social, educational and cultural factors that lead to conditions like anaemias, protein calorie malnutrition, toxaemia and others. He, in collaboration with the obstetrician and social and preventive medicine specialist, needs to understand the causal relationships between socio-economic status of women and episodes of premature births, low birth weights and high perinatal mortality. Andhra Pradesh is the first State in our country to start an interdisciplinary approach towards the total child care in a community as a pilot project, at the Institute of Child Health, Niloufer Hospital, Hyderabad within the department of social pediatrics under the Indo-Dutch Project for women and child welfare. The team of social pediatrics has members from different disciplines namely, obstetrics, pediatrics, social & preventive medicine, and nutrition. Thus it is an interdisciplinary approach towards the comprehensive care of the child in relations to his family and environment. We have a clinical and a field division. Field programmes are carried out by a survey team. The home visits, besides offering an opportunity to work within the community, provides a realistic picture of peoples health problems as they exist in the community which would help in developing comprehensive service programmes for mother and child. Secondly, the survey team through its movement within the community serves as a liason between the people and the clinical team which mainly engages itself with immunisation, nutrition, therapeutic and anthropometric work at particular place. There has been a tremendous reduction in the incidence of different diseases specially those of infectious nature in the developed countries. This is because of the advent of different immunization agents and an improvement in the socio-economic status of these countries. To plan any programme for the improvement of health of a particular community or country it is essential to know the pattern of morbidity and mortality in that area. This in turn would help us to know the need for medical and paramedical staff to

* Asst. Professor of Pediatrics, Niloufer Hospital, Hyderabad.

provide nation-wide health care of a better quality.

Our Set up – At the Shankerpally P.H.C. in Chevella block of Hyderabad district, our team of social pediatrics visits every wednesday and saturday and conducts an obstetrics and pediatrics clinic. The programme undertaken mainly relates to –

1. Clinical evaluation of children under 5 years and mothers in child bearing age.

2. Evaluation of nutritional and growth status of children and mothers.

3. Immunization of children against communicable diseases.

4. Supplements of vegatable protein mixtures to the home diets of pre-school children.

5. Iron and folic acid and other supplements to antenatal mothers. This is undertaken by the social obstetrician.

6. Concentrated Vit. A supplementation to pre-school children.

The centre was opened under the Indo-Dutch Project for child and women welfare in February 1970. During the first six months a study of 450 children attending the clinic showed the following disease pattern.

P. C. M.	128 cases.
Upr. Resp. Tract infections	112 cases.
Gastroenteritis	92 cases.
Vit. deficiency (Vit. A & D etc.)	74 cases.
Skin diseases	32 cases.
Eye. E. N. T. Dis.	6 cases.
Infectious diseases	4 cases.
Tuberculosis	2 cases.
Total	450 cases.

Protein calorie malnutrition topped the list followed by the respiratory infections and gastro-enteritis. Therefore, under this programme we are emphasising on the most commonly observed problems like P. C. M., Vit. A. deficiency and anaemias rather than the rare clinical entities like congenital heart and other rare syndromes. The economic implications of such an approach are well known to all of us.

The protein calorie malnutrition was dealt with by vegetable protein packets whose formula is given below.

Wheat	35 gms.
Groundnuts	6 gms.
Bengal gram	11.5 gms.
Skim Milk Powder	6 gms.
Sugar	11.5 gms.
	70 gms.
Calories	250
Proteins	10 gms.
Cost	12—15 Paise.

These packets are prepared in Niloufer Hospital and are based on locally available foods. They are given free to children suffering from protein calorie malnutrition for first 3 weeks and when the child shows signs of improvement (disappearance of oedema; alertness in child) then the mother is told by the Nutritionist about the contents of protein packets. The mother is encouraged to make such packets at home. There has been a very good community response to this nutrition programme. Many of the mothers have started making these packets at home and bringing them to centre. Advantage is taken of such enlightened and enterprising mothers and they are made to speak to the ladies in the nutrition room. Thus this feed back technique not only encourages mothers but also gives confidence to them. The very fact that the P. C. M. has become number 3 in the incidence of the disease pattern in the study of 2,000 children after

1½ years of starting the clinic proves the success of this programme The study of 2,000 children at Shankerpally after 1½ years revealed the following disease pattern.

Respiratory infections	...	480
Gastro-enteritis	...	430
Protein Calorie Malnutrition	...	370
Vitamin Deficiencies	...	340
Skin Infections	...	200
Eye and E. N. T. Dis.	...	62
Infectious diseases	...	26
Tuberculosis	...	4
Miscellaneous-Cong. Dis., P. U. O. etc.	...	40
For immunisation.	...	48
Total		2,000

The second great task is of conquering the killing infectious diseases. This can be met with the active immunization programme throughout the country. When our scheme was started only 60% of the children were immunised against small-pox. Now 95% of the children of the area are immunised against smallpox, B. C. G., D. P. T. and Polio.

Unfortunately, in our country smallpox vaccine is the only one which is easily available followed by cholera and T. A B. The vaccines like D. P. T., Polio and Tetanus toxoid are not available free in all the hospitals and health centres. B. C. G. vaccination is possible only if team is operating in the area. Even if the medical officers and general medical practitioners want to do immunisation, they are not available freely. Providing immunisation definitely works out much cheaper than treating the disease.

During the survey in a sub-centre (Dhobipet) and surrounding villages, many cases of leprosy were found in children. This lead to the study of incidence of leprosy in the pediatric age group. The study was conducted by house to house survey by this integrated team. Alternate houses were surveyed and the coverage is as follows

Total number of houses in the village	739
Total number of houses surveyed	370
Total population	4,025

The survey team consisted of Asst. Prof. of Social Pediatrics, Asst. Prof. of Social and Preventive Medicine, Health Visitor, Health Educator and two Leprosy Workers from Hind Kusht Nivaran Sangh, a local guide and a local village headman. 103 cases of leprosy in the pediatric age group could be detected by the survey which would have been otherwise gone un-noticed.

Age Incidence

	0-5 Yrs.	6-10 Yrs.	11-15 Yrs.
Rural.	8%	56%	36%
Urban	8%	38%	54%

History of contact was present in 50% of cases. To compare this data a study was also conducted at an urban centre (Dhoolpet in Hyderabad city) where only referred cases attended daily.

Socio-economic Conditions—The people in the village live in a single room thatched house with poor ventilation, huddled together with leprosy cases and animals tied in the same premises. Now we have started B. C. G. against leprosy to all the children in the area though the preventive role of B. C G. against leprosy is still doubtful. A future survey may confirm its utility.

This clearly shows that all cannot be done by a pediatrician alone. Such community problems cannot be solved by a single person or a single department. A team work with an interdisciplinary approach is the real answer for such community problems.

Types of Leprosy

	Lepromatous.	Non-Lepromatous				N ? L
		Tuber-culoid.	Maculo Anaes-thetic.	Poly-neuritic.	Border line.	Indeterminate.
Rural.	12%	16%	28%	—	—	44%
Urban.	2%	34%	38%	4%	14%	8%

Every department should consider it their duty to work in close collaboration and co-operation with the members of the team. When every medical college has all these departments in the college they could work hand in hand towards the care of community. All the assistant professors, postgraduates and undergraduates should be posted by rotation atleast for six months to one year, so that all should become aware of what is meant by Preventive and Social Pediatrics. When posted outside they can implement such programmes and give a practical approach towards the care of the block for which they are responsible.

A similar study about child rearing and weaning practices in 500 mothers was carried out at Shankerpally. It was found that the mothers commonly applied tile paste on small-pox vaccination which is the main cause of tetanus in infants. They apply counter irritants on forehead or temple region in case of convulsions, cut the umbilicus with the sickle, do not give ground-nuts with the belief that it causes nausea, late weaning practices, not using bengal gram as it causes formation of pus etc. They threaten the children with dire consequences by taking the names of wild animals, ghosts, old ladies and beggers if they did mischief or refused to take food. Such taboos and beliefs can be overcome by this team approach. We could succeed by our persuasion in introducing bengal gram and groundnuts in their daily food. Nutritional problems can be solved by explaining about the correct method of weaning. A social obstetrician can help the pediatrician in cutting down the incidence of neonatal tetanus by giving tetanus toxoid to the pregnant mothers and explaining to the mothers about the necessity of cutting the cord with a sterilised knife.

The average pediatrician is now so completely occupied in curative practice that he is unable to devote enough time to preventive pediatrics, particularly child nutrition. The pressure of work in the General O.P. Department does not permit him to advise the mother about the feeding. In our hospital, fortunately, we could succeed in opening (1) Nutrition clinic where the pediatricians refer all nutritional problems. The dietitian and the nutrition research assistant help the mother in solving their nutritional problems apart from teaching undergraduates and postgraduates in this clinic. (2) Immunization clinic, where all the children are immunized against D.P.T., Polio, Smallpox and B.C.G. (3) Child guidance clinic, where children are referred for any behaviour problems. (4) Well baby clinics, where the newborns are taken care of regarding growth, feeding and weaning practices. (5) Clinico-social conferences are held every month wherein undergraduates study a problem

regarding their clinical, environmental, socio-economic and related maternal problems in the hospital.

In a poor country like ours there are many diseases prevalent but in any programme top priority should be given to the most common prevalent conditions. Our problems are mainly malnutrition and vitamin deficiencies, where much can be achieved with minimum expenditure and genuine effort. Unfortunately emphasis in postgraduate and undergraduate teaching has been always towards diseases and the treatment and complications. Not much emphasis is given towards the prevention and nutritional aspects with the result that the medical student during the undergraduate and postgraduate training today does not attach much importance to learning about vaccination, nutrition (common food values) and health education and carries out these activities with great reluctance. It is considered to be a job for Nurses, Health Visitors, Public Health Nurses and Social Workers. A modern medical student would not know the common food values but will be expert in all the rare syndromes which is not useful for him in a rural P. H. C.

Family Planning and Pediatrics

Portman (1971) at the Second National Pediatric Conference at Bandung, Indonesia in April 1971 has correctly explained the role of pediatrician in Family Planning.

Family Planning—its implementation and success is not the sole responsibility of an obstetrician. The department of obstetrics and gynaecology cannot meet this challenge alone. Much can be achieved by close collaboration of all the three departments of obstetrics, pediatrics and social and preventive medicine.

The role of pediatrician in the promotion and acceptance of family planning is very important as he comes in close contact with mothers and children than any other medical specialist and he will have the full confidence of the mothers after he has demonstrated that the health, and if necessary the cure of their children, are main concern. Therefore they will listen more carefully to any advice that he will give them. This approach is followed by our team at the centre. During filling the card of family and their income, the mother with large family and poor income is immediately interviewed and referred to the social obstetrician in the opposite wing. The response to the family planning has been very encouraging at Shankerpally due to the joint effort.

According to Dr. Beasly "The principle reason why family planning is not practised among the poor is lack of knowledge and lack of adequate service" and such a team as that of ours at Niloufer Hospital not only gives the service to the child and the family but also helps greatly in giving clients the necessary knowledge about family planning.

According to Dr. Helen Wallace "Combining maternal and child health and family planning may have a better chance of improving the quality and parental care in present society" but also improvement of health services for mothers and children is a pre-requisite for family planning. One of the reasons for having many pregnancies was the fact that parents knew, from past experience, that high percentage of their children would die, so that it was necessary to produce more children to have the desired family size. But before we can convince the parents that they should limit the number of pregnancies, we must be able

ROLE OF SOCIAL OBSTETRICS IN THE INTER DISCIPLINARY APPROACH TOWARDS RURAL HEALTH CARE

SALEHA QURESHI*

Obstetrics relates more closely to public health than does any other field of medical practice. Medical institutions have failed to give sufficient impetus to the teaching of social obstetrics. Social aspects in the teaching of obstetrics and gynaecology are defined as those aspects of personal and community life which have a bearing on a women's reproductive life.

The purpose of medical education is to prepare a good general physician who is able to serve the community as well as the individual.

The ethos of family care, and the acceptance by the rural people of a continuing doctor-family relationship makes combined obstetrics and pediatrics work more desirable. Postnatal care and family planning naturally harmonize with initiation into the immunization programme, and with supplementary feeding of the pre-school group. Domiciliary visits will also provide opportunity for a linear study of relationship between infant morbidity and preceding birth events.

The trend in modern medicine should be more towards coalescence than compartmentalization of departments.

The Social Pediatrics department of Osmania Medical College has taken the lead in unifying the three related disciplines of Obstetrics, Social & Preventive Medicine and Pediatrics. This department represents an integrated approach to teaching of community medicine to the students. For the teaching of community health, collaboration with government health services is required, like maternity and child welfare centre for urban and primary health centre for rural field practice area. This collaboration has a two way benefit. It gives an opportunity to avail the building and services of the medical and para-medical staff and in return the public can avail "on the spot" specialist advice and consultation.

In this paper the rural health care undertaken at the primary health centre at Shankerpally, by the social obstetrics team has been summarised.

Rural Health Care Programme at Village Shankerpally

Shankerpally is one of the big villages of Chevella Taluka, belonging to Hyderabad district of Andhra Pradesh. It is situated about 26 miles away to the north west of the city of Hyderabad and is connected by road as well as by railway line. This village along with the surrounding six villages with a total population of 8,400 was the area of operation for the year 1970-71, and for the subsequent year two more subcentres, Maharajpet and Dhobipet were added, making a total population of 13,104 as the field practice area.

* Asst. Prof. of Social Obstetrics, Osmania Medical College, Hyderabad.

A regular maternity and child health clinic was conducted at these places with the help of local medical and para medical staff.

A preliminary survey was conducted in this area, before starting these clinics, to get the background information of the village. This was done with the help of Assistant Prof. of Social & Preventive Medicine. This survey helped us in understanding the socio-economic and cultural behaviour of the people which has a bearing on the obstetric problems of the community. Based on this information the community health services were formulated.

Work done at the Clinic

1. Conducting ante-natal and post-natal clinics.
2. Giving prophylactic tetanus toxoid during pregnancy.
3. Sorting out cases for hospital and home confinement.
4. "Well women's clinic".
5. Gynaecological clinic
6 Training of traditional dais.
7. Family planning clinic and conducting periodic tubectomy camps.
8 Training of local medical and para-medical staff.

All the pregnant women of the area under study were registered and were called to the clinic for regular antenatal checkup. Iron and folic acid supplements were given. Nutritional status of these mothers were found to be low. The reasons being poverty, ignorance and certain prejudices due to cultural factors. It was noted that no extra or special diet was given to pregnant or lactating mothers. Dietary intake studies made on 30 subjects gave the following results (table 1).

The poor nutritional status of this community may be one of the contributing factors to the low birth weight of the babies (the usual birth weights falling between 5-6½ lbs). Protein and calorie supplements are being given to the mothers during pregnancy and birth weight studies are underway.

The poor nutritional status may also be responsible for the high incidence of premature births in the community. Most of the mothers are not sure of their duration of pregnancy, so many babies termed "premature" might actually belong to the so called category of "small for date" babies.

Table 1

	Number Surveyed.	Proteins Gms/day.	Total calories per day.	Recommended Allowance for Indians (N I.N. 1968) Proteins Gms/day.	Total calories per day.
Non-pregnant Women	10	38	1600	45	2200
Pregnant mothers.	10	42	1800	55	2500
Lactating mothers.	10	40	1800	65	2900

Incidence of Tetanus in the Community

Animal sheds were found in close vicinity of the living rooms. At some places animals and human beings lived under one room. The practice of applying cow dung to the umbilicus of the newborn was also common. Immunization of pregnant mothers was adopted as a routine measure against neo-natal and postnatal tetanus.

Analysis of the survey data indicated that 27% of the infant deaths, before the start of the programme, were due to neonatal tetanus. Out of 481 mothers who received tetanus toxoid during pregnancy under this programme, there was not a single case reported of tetanus nor was there any case of congenital malformation. Only three cases of neonatal tetanus were reported in this area during the preceding two years. These cases did not belong to the area and were not immunised.

Sorting out Cases for Hospital and Home Confinement

(a) Cases expected to have normal delivery were encouraged to have home deliveries.

(b) Problem cases such as mild toxaemia, anaemia, twin pregnancy etc., were advised to have medically supervised delivery at the P. H. C. hospital.

(c) Cases of gross cephalo-pelvic disproportion, malpresentation and position, cases of previous caesarian section were all shifted to institutions for institutional care and confinement.

Table 2 shows the mode and place of delivery of 300 cases which were analysed at the end of 1½ years.

Table 2

	Home	P.H.C.	Referal Hospital	Total
Normal	264	24	6	294
Forceps	—	—	4	4
Caesarean Section	—	—	2	2
Total	264	24	12	300

Before our programme started in this area, hardly any deliveries were being conducted at this primary health centre.

Well-Women's Clinic and Gynaecological Clinic

Routine gynaecological clinic was conducted and minor treatment like cauterization, D. & C. were carried out at the P. H. C. itself. A "Well-Women's Clinic" was conducted and cytological screening for cancer was done for suspicious cases.

Training Programme for Traditional Dais

Chevella block has an area of 961.9 sq. kilometers and a population of 1 lakh 12 thousand with only one primary health centre, one civil hospital and one civil dispensary. There is a great scarcity of even trained midwives (one midwife for every 8 to 10 thousand population). Rural India is still one of the most "under doctored" areas—90% of the deliveries in this area are being attended by untrained barber midwives. It was decided to give training to these indegenous barber midwives as they form a useful member of the medical community. So far 40 dais have been given training to conduct delivery in an aseptic and antiseptic manner and also to detect cases requiring referal services. They were provided with UNICEF delivery kits and were paid incentive of rupee one for reporting each delivery conducted by them. This helped

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us to maintain accurate birth records in the area of operation. It is also hoped that this training to some extent will bring down maternal morbidity and mortality and will bring down the incidence of puerperal sepsis in the community.

Family Planning Programme

It was found that the family planning drive was more successful under this pro gramme because of the combined obstetric, paediatric, nutritional and preventive services made available. Because of these above services the mother has a sence of security for the welfare of the living children and shows willingness to limit the family. It is the personal belief that this approach is likely to evoke better response from the community than the mass tubectomy camps which lack "doctor-patient relationship".

Thus the obstetrician working in close collaboration with the paediatrician and social and preventive medicine department will be in a better position to appreciate the problem of community as a whole. This awareness on the part of the obstetrician is expected to go a long way in motivating the students of medicine to put into practice the concept of preventive and social obstetrics in day to day life which is, and should be, the aim of medical education.

ROLE OF SOCIAL AND PREVENTIVE MEDICINE IN AN INTEGRATED TEACHING OF SOCIAL PAEDIATRICS

N. PRALHAD RAO*

Today, Social & Preventive Medicine (SPM) does not lack in statistics to show that the environmental hazards like bad housing, poor nutrition, improper sanitation and hostile social milieu are responsible for high proportion of diseases and premature deaths. But it certainly suffers in providing evidence to prove that the proper attention is paid to the social and preventive aspects of medicine in teaching of medical sciences.

During past two decades, many medical colleges in India have established the department of S.P.M. as an independent discipline, in line with other major disciplines like Internal Medicine and Surgery. In some it has been upgraded from part-time to full-fledged departmental status so that adequate stress could be laid on these two neglected but important aspects of medicine. But neither of the above steps taken by the Medical Faculties seems to have succeeded in providing preventive and social concepts of medicine to the students. It appears, as though, the traditional academic distinction accorded to it as an independent discipline tended to foster separation of medicine into two compartments viz, curative and preventive medicine, at academic level and further the isolationist trends between clinicians and public health workers at executive level.

This unfortunate situation is mainly due to conventional methods of teaching practised in medical education. The method is 'subject-centred' rather than 'problem-oriented', is 'curative-based' rather than 'preventive-based' and is often taught as blocks of information more or less independent of one another with least involvement of community.

Secondly, the SPM which bears relevance to almost all the medical specialities has inadvertantly been dubbed as a non-clinical department in the complex of medical education with the result it has unwittingly dissociated itself from the teaching programmes of clinical departments, consequently the teachers of SPM often taught the lessons of Social and Preventive medicine in isolation without clinical and curative material around them. As a result, the sense of service and prestige (and also research) which is usually associated with practice of clinical medicine did not find place with social and preventive medicine.

Under these compartmentalised system of medical education in our medical colleges, the role of Social and Preventive Medicine in an integrated teaching situation such as social paediatrics is difficult to define. But, having had an opportunity to work in a set-up which brought together the three disciplines of Paediatrics, Obstetrics and Social & Preventive Medicine, perhaps for the first time under one canopy as a viable

* Assistant Professor of Social & Preventive Medicine in Social Paediatrics Programme, Osmania Medical College, Hyderabad.

teaching unit, we would prefer to describe the way we went about in realising the objectives of SPM in particular and medical education in general, with respect to paediatric teaching.

Resetting of Priorities

Like other major clinical disciplines paediatrics also presents a wide-spectrum of clinical conditions requiring serious attention in the teaching programmes of under-graduates. But considering the morbidity pattern of local paediatric population and also the availability of resources of men and material the subject of Nutrition and Infection have been chosen as the areas to be dealt in depth by the department of Social Paediatrics. And taking into account certain organisational and other constraints which are likely to be met with any institution of professional education wishing to introduce major innovation into the curriculum and teaching methodology, a workable teaching 'plan ops' was drawn, in conformance with the ongoing programmes of SERVICE, TRAINING and RESEARCH in and around the Institute of Child Health, Hyderabad. It is too well known that unlike service, training and research aspects do not become automatically an integral part of an action programme unless specifically developed. Hence, special attention is devoted to develop these two aspects in all the programmes undertaken by the department. The main purpose of these programmes is to discern the social, educational and cultural factors that lead to anaemias, toxaemia, PCM and other forms of common diseases in the area of maternal and child health (MCH).

Training of Medical Students

The under-graduate medical students who are posted to Paediatric wards in batches of tens and fifteens every month are involved in studying a problem case from clinical, social, economic and nutritional angles. The 'total' study is accomplished usually in 3 to 4 teaching sessions conducted by the team.

(i) In the first session the students are briefed about the broad aims and objectives of the exercise to be undertaken by them. The students are also told about the major public health problems that pertain to the field of paediatrics. Stress is invariably laid on nutritional problems of pre-school children in relation to their diet and feeding habits, belief system with respect to child feeding and child rearing habits of the local community. The importance of anthropometry in the evaluation of children's growth status and the use of weight-charts are explained in a general way.

(ii) In the second session students are encouraged to discuss the plan of investigation. Usually during this session students are helped to evaluate the child's clinical, nutritional and socio-economic status. A detailed account of the child's feeding and dietary habits (prior to hospitalization) are obtained from the mother. An assessment of the mother's health and nutritional status is made and her previous obstetric history is obtained.

(iii) The second session is followed by visits to the home of the patient. The students and staff members jointly visit the family to observe for themselves the physical and social environments of the family. During the visit the key members of the family are interviewed by the students in an informal way and assessment is made with regard to family income, educational status and cultural and behavioural pattern of the family. Dietary intake figures are obtained by employing a questionnaire method

(with the help of standardized cups wherever necessary). Once complete information is obtained, students are helped to critically evaluate the child's health and nutritional status with respect to his home environment, family's socio-economic status, dietary and feeding practices. At this point they need guidance for doing library work, which becomes necessary especially when they wish to compare the anthropometric measurements and nutrient intake figures with the standard norms and offer comments on their observations.

Finally, the case is presented in an informally conducted clinico-social conference under the supervision of staff members of the department, wherein the students are encouraged to discuss the case in a comprehensive manner.

During the investigative procedure that is initiated at the bed-side in the hospital and is carried through the study of home environment and socio-economic and socio-cultural milieu of the patient, the teacher of SPM has to address himself to the following tasks.

Firstly, he has to introduce the students to the methods of observing and communicating with his patients that would enable a good personal relationship to be established between them. This means to train the students to hear his patient's points of view, to listen to what he has to say and to observe and interpret his "non-verbal" behaviour.

Secondly, he has to provide the student with an integrated understanding of behaviour that takes account of his patient's physical, physiological, psychological, social, cultural and educational status.

Thirdly, he has to help the student to visualize the impact of his advice on the personal commitments and the extent to which these commitments will interfere with the treatment.

Field Research Work

Evidently field-work forms the main-stay of the programmes of Social Paediatrics. The SPM has a leading and predominant role in assisting the clinical departments to initiate and implement field-based studies on the problems of public health importance. This is really a difficult job to accomplish because it involves a near herculean effort to get a clinician interested in field oriented projects. It really requires a lot of convincing to "convert" a hard-core, hospital-bound physician to see one good point in laborious, time consuming and un-rewarding public health undertaking. The reluctance of the clinician to participate in field-based programmes also stems from the fact that it calls forth the doing of his "specialised job" at the 'people's door-steps or 'beneath the banyan tree', as it is called.

Fortunately now, it is increasingly realized by the leaders in clinical medicine that exclusive emphasis on cure has never reduced the amount of sickness in a community unless followed up by a massive preventive and health promotional action and clinical departments are slowly but surely teaming up with SPM for carrying out their work in the fields.

Following is a brief resume of the field projects which the department of Social Paediatrics has undertaken. We do not claim that these works, which we have carried out as a team, are a piece of original research, because our objective is not always

Our brief but significant experience in the area of Team-Teaching suggests that the teacher of SPM has a multifaceted role to play in developing the concept of comprehensive medicine through inter-disciplinary approach.

In a sense he has to be a "crusador" for the people in rural and urban slum areas without being a fanatic, a "converter" for his clinical colleagues without being a missionary and a "co-ordinator" for diverse set of professionals and paraprofessionals without becoming a politician. In addition, he has to be a social scientist and a public health physician with a basic understanding of applied sciences such as epidemiology, human behaviour and statistics so that public health work acquires an element of research and service in it.

FEBRUARY 1, 1969.

MP-SE-12

SOCIAL SCIENCE CONTENT OF TEACHING OF SOCIAL PAEDIATRICS

D. Banerji
Associate Prof. of Social Science
National Institute of Health
Administration and Education
New Delhi.

I. WIDENING SCOPE OF PAEDIATRICS - INTEGRATION OF CURATIVE, PREVENTIVE AND REHABILITATIVE ASPECTS:

Paediatricians were among the first to extend paediatric care services, beyond the four walls of hospital wards and clinics, to the child's family; they also added a preventive dimension to the purely clinical approach to their patients by developing immunization units within their own organizations. Shifting of focus from the individual child and his family to the community as a whole, leading to the development of an integrated community level approach to the preventive, curative and rehabilitative aspects of child health problems is a logical extension of this trend (1).

Even the old approach to paediatric care services to individual patients has had a particularly important social dimension. With the phenomenonal widening of the scope of paediatrics, the role of the social considerations has become even more crucial and pervasive. As a result, increasing attention is being paid to the new discipline of Social Paediatrics.

II. A WORKING DEFINITION FOR SOCIAL PAEDIATRICS:

Because of the comparative newness of the discipline it is not surprising that different workers have used different definitions of social paediatrics, depending on their perception of its role in their approach to practice of paediatrics (see, for instance, 2, 3 and 4). For the purpose of this presentation, it is intended to adopt a definition which covers as wide a field as possible. Gade (5) has offered such a definition:

The "social paediatrics" keeps to emphasize that the child is an integral part of the family and of society at large and that environmental

.....2.

factors, i.e., social as well as economic, physical and biological - determine to a large extent, the pattern of a paediatric disease. At the same time, the term denotes the need to give due consideration to the growth and development process of the child in the epidemiological interpretation of causes of childhood illness. By drawing attention to the considerable extent to which a disease has a social origin, the practice of social paediatrics ensures that social remedies are taken into account in a comprehensive treatment programme.

III. ASPECTS OF SOCIAL PAEDIATRICS:

The following is a very brief outline of some of the areas that are covered within Gade's comprehensive definition of social paediatrics:

(a) Social etiology of paediatric disorders: Such social considerations as infant and child feeding and other child rearing practices, community norms concerning sanitary practices, family size norms, food habits, economic status and the influence of the overall social and cultural milieu on the growth and development of the personality of children are known to play an important role in the etiology of some of the major paediatric problems in developing countries.

(b) Community beliefs, attitude and practices concerning paediatric disorders: This includes such considerations as perception of the states of health or sickness in children by the parents, their beliefs concerning causes of various childhood disorders, their attitude towards various folk medical practices and towards services offered by physicians and paediatricians and the level of awareness of the childhood disorders within the community as a whole.

(c) Social orientation of paediatric services: As has been brought out earlier, a number of social factors have influenced the approach to problems of child health. In the context of developing countries, there are four additional considerations which have major bearing on practice of paediatrics:

(i) The overwhelming size and extent of the paediatric problems in the community - for instance, mal-nutrition and under-nutrition, various communicable diseases & gastro-intestinal disorders.

(ii) Even greater relevance of social and economic considerations to etiology of major problems.

(iii) Compared to the more industrialised countries, in these countries the social and cultural factors that are of relevance to health fields are often significantly different.

(iv) The very limited availability of resources, in terms of personnel, funds and equipment, for providing paediatric services to the community.

.....3.

Orientation of the principles of practice of paediatrics to these factors is essential to ensure that they are applicable on a community wide scale in developing countries.

Hugh R. Leavell (personal communication) has underlined the significance of taking into account these factors in the formulation of health programmes in developing countries. He has pleaded for separation of what he calls "the natural science essentials" of health procedures that have proved useful in scientifically advanced countries from what he designates as the "socio-cultural overcoatings" which have unconsciously got mixed up with such procedures in the course of t eir growth and development in these advanced countries. These "overcoatings", Leavell goes on to say, have little relationship to the "natural science essentials". For the developing countries these socio-cultural overcoatings of western countries could be detached from the core formed by the "natural science essentials" and the latter can be inserted into a new "envelope" or "coating" that will harmonize better with the socio-cultural environment of the developing countries.

(d) Developing skills of communicating with the parents and imparting health education: In order to establish a communication link with the parents of the children, a paediatrician is required to have an understanding of their "cognitive frame". This is particularly important in developing countries as very often there is wide gulf between the socio-cultural background of the physicians and that of the parents of the children. He is also required to motivate the parents to accept the prescribed measures, which include curative, preventive and rehabilitative aspects, by explaining to them their importance in the context of their own needs and problems. He thus plays the role of a health educator here.

(e) Contributions of paediatric services to the promotion of small family norms: There is now widespread recognition of the implications of the problem of rapidly rising population in developing countries. Encouraging acceptance of small family norms in the community forms a key-stone of programmes for controlling this rapid population growth. Practice of effective paediatrics in these

countries can make substantial contributions in promoting small family norms by ensuring normal growth and development of the children that are already born. Practice of good paediatrics should, therefore, become an integral component of the community-wide programme for population control.

IV. SOCIAL SCIENCE AND SOCIAL PAEDIATRICS:

In the above elaboration of the field of social paediatrics, there have been frequent references to such terms as "child rearing practices", "folk medical concepts", "community awareness of child health problems" and "cognitive frame" of individuals. Study of these various aspects of the community and the family and of the influence of the community on the behaviour of individuals come within the purview of social science. Knowledge from the field of social science thus forms a major constituent of social paediatrics.

This knowledge is mainly derived from the three major components of social science: social or cultural anthropology, involving the study of the culture or the way of life of a community; sociology, related to structure and functions of group life; and, social psychology, interested in studying how behaviour of individuals is determined by social and cultural considerations. The relevant aspects from all these three components are to be included in the teaching of social paediatrics.

V. APPROACH TO TEACHING OF SOCIAL SCIENCE CONCEPTS IN SOCIAL PAEDIATRICS:

Social paediatrics should be considered as a component of the wider discipline - Social Medicine, which also includes social dimensions of such other disciplines as internal medicine, geriatrics, obstetrics and gynaecology, surgery and ophthalmology.

There has been growing recognition of the importance of social medicine in the teaching of medical sciences (6). With this recognition, social science is now considered as science basic to the education of doctors. It is, therefore, desirable that students are acquainted with these basic elements of social sciences along with the teaching of such other basic sciences as biochemistry, microbiology, protozoology and biostatistics. For teaching these aspects, it will be necessary to have social scientists in the staff.

Subsequently, while dealing with such areas as social etiology, social pathology and social orientation of practice of paediatrics, it is necessary to blend the basic social science elements with other clinical considerations in order to present an integrated picture of social paediatrics to students. This can be taught by paediatricians who are well versed with the social dimensions of their disciplines.

SUMMARY:

The recent trend of bringing about integration of the curative, preventive and rehabilitative aspects of problems of child health has further underlined the importance of the social dimensions of paediatrics - Social Paediatrics. This includes such considerations as social etiology of childhood disorders, the prevailing beliefs, attitude and practices in the community concerning such disorders and considerations of communication with parents and of imparting health education to them. Certain epidemiological characteristics of problems of child health in developing countries, the significantly different socio-cultural setting of these countries and the acute limitations in the availability of resources underline the importance of bringing about a suitable reorientation of the practice of paediatrics. As practice of good paediatrics encourages small family norms, it should be an integral component of family planning programmes.

Social science provides knowledge concerning various aspects of community and the family and the behaviour of individuals in a socio-cultural setting. It thus forms a major constituent of social paediatrics. A professional social scientist should expose the students to the basic elements; a paediatrician, who is also well-versed with the social dimensions, should explain how social science ideas can be incorporated in the practice of social paediatrics.

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Undergraduate Teaching in Paediatrics

BY

DR. G. COELHO
Cambridge Court, Bombay

Material :

An independent department of paediatrics of not less than 25 medical beds, 15 surgical beds and 10 isolation beds.

A daily medical and surgical out-patients department.

A service of the newborn.

A child guidance clinic that meets atleast twice a week.

Staff - Paediatrician :

Two Assistant Paediatricians; one Resident Registrar with post-graduate qualifications in paediatrics, two Resident House Physicians.

Practitioners with paediatric qualifications to assist at the out - patient department - they will attend for a limited number of hours on specified days of the week.

One Surgeon, one Assistant Surgeon, one Resident Surgical Registrar with post-graduate qualifications, one Resident House surgeon.

When the load at the out-patient increases, part-time practitioners on the same basis as above, are to be increased.

One Child Psychiatrist, two assistants, two Social Workers, Child Welfare trained workers or Social workers to help at the out - patients department.

Facilities of a laboratory for routine and special work with adequate personnel and equipment.

Facilities of other auxiliary departments - Radiology, Physiotherapy, special clinics for the handicapped.

Size of Batch of Students :

Not more than 15 for the unit of the above size.

Period of Attendance :

Three months - Two months continuous under the Paediatrician and one month under the Paediatric Surgeon.

Course of Instruction :

Newborn service – One hour twice a week for 8 weeks.

Out – patient Department – Two hours on alternate days thrice a week. Examination of new cases and a follow-up of old cases. Teachers and practitioners will have batches of five students. They will check up the history, the physical finding and teach briefly on each case. The batches should rotate round the teachers each week.

Child Guidance Service – One hour twice a week for 8 weeks. This should be on the same days as the out – patient days and the Child Guidance Clinic must be located in close proximity. The sessions should be consecutive.

Ward Attendance - For two hours in the mornings on alternate days thrice a week. The students must finish their hour in the new born department and then pass on to the wards. In the wards the students should be grouped in batches of three and cases allotted to the group, but each individual student should be responsible for every case. The history and the examination notes should be written by them and the routine laboratory investigations carried out by them and repeated frequently to learn the progress. The patients of each batch must be changed every week and in doing so an attempt must be made to see that each student has had an opportunity to learn the common conditions of the place. In these two hours the teaching must be conducted by the Paediatrician and the Assistant Paediatricians.

Both at the out – patient and the in-patient departments the teaching should be integrated. The anatomic and physiologic norms must be stressed in every case and the deviations from the norm demonstrated on the patient through physical examination, laboratory investigation, other auxiliary aids and post-mortem material. Therapy must be taught in all its aspects in its application to the case presented. Both in the out – patients and in-patients departments more patients must be followed up by the student with the teacher. The presentations must be brief Case material must be collected and fed so that as far as possible the common conditions are all dealt with in the period of the course. In clinical teaching by the bedside discourses must be avoided. The student must supplement the tuition by self education and of these he should maintain notes which must be inspected by the tutorial staff.

The Paediatrician and the Assistant Paediatrician should give one hour lecture every day after the ward session, four times a week for 8 weeks.

The child psychiatrist should give a lecture twice a week on the day he has his out–patient department sessions and these should be given for 8 weeks.

The students should meet in the wards every afternoon again to meet the parents of the children, to learn of their home situations, to take charge of the new cases allotted to them and to examine other cases in the wards. During this session, the Resident should check their findings

demonstrate physical signs, laboratory techniques, minor surgical procedures and assist in reading skiagrams, studying pathological specimens and slides. The attendance and teaching on the surgical side will be on the same pattern.

Content of Instruction :

1. Development and growth, physical, mental and social from conception to adulthood and deviations from normal, their causes, effects and prevention.
2. Nutrition – physiological principles – norms for different ages deviations from sound nutrition causes, effects and prevention.
3. Science of genetics and disorders of genetics.
4. Disturbances of good health caused by infection, environment, physical agents, improper nutrition, deprivation, ignorance.
5. Psychological development, difficulties in social adjustment and abnormal behaviour.

The Objective of undergraduate teaching should be to equip the student to deal with the day to day problems he will meet in his community after graduation.

SOCIAL PEDIATRICS AS STEP TOWARDS PRACTICE OF INTEGRATED TEACHING OF COMMUNITY HEALTH

N. PRALHAD RAO*, Y.C. MATHUR** AND HARISH CHANDRA***

The traditional teaching methods in almost all the branches of learning, of late, have been questioned by both the classes as well as by the masses. Even the nature and quality of medical education has come under strict scrutiny in recent years. Medical education, due to certain limitations imposed on it by the conventional methods of teaching of medical sciences, has failed in its basic objective of producing a "good" physician, who conforms to the ideals set by W.H.O. study group on pediatric education (W.H.O., 1957). In other words, it has failed firstly, to provide students an integrated concept of medicine as a community science concerned with physical, mental and social well being of men, women and children. Secondly, it has delayed the development of an unified medical and health services in many countries including European countries (Bozman, 1961). And thirdly, it tended to produce more specialists than good generalists, in utter disregard to the needs of the community.

The leaders in medical education, conscious of this serious situation, prevailing all over, have expressed their concern through national and international forums, which has been documented in the reports of the various seminars, symposia, expert committees and study groups (WHO, 1959; WHO, 1964; MCI, 1969; UGC Seminar, 1969). The medical educationists, besides recommending measures like restructuring of curriculum content, resetting of subject priorities and reorienting of evaluation (examination) system, have also suggested multidisciplinary teaching approach in medical education (WHO, 1970). So far much has been said about the teaching of comprehensive medicine through interdisciplinary teaching but little has been done in a practical way in this direction. Even today, the trend towards specialization and sub specialization with consequent fragmentation of medicine continues unabated which has resulted in the decline of proportion of physicians who are in general practice (W.H.O, 1963).

Limitations of traditional teaching and its effect:

It is too well-known that owing to certain facts of history, we in India, have inherited the British system of education. Educational curricula, including that of medicine were mainly modelled to fit the finished products of the Institutes into a narrowly defined technical "service" role which their parent country prescribed for them (King, 1969). Whatever might have been the broad aims of the then medical education, the teaching leaned heavily on the "disease" rather than the "diseased"; it emphasised more often the "diseased organ" rather than the whole individual. In other words, it

* Asstt. Prof., P.S.M. ** Addl. Prof., Paediatrics *** Director and Prof., Paediatrics, Institute of Child Health, Hyderabad.

tended to be "cadaver-oriented" and "organ-centred" rather than "man centred" and isolated the students from the very community they were expected to serve later. With the result, the "end products" of the medical college happened to be better diagnostician, able therapists and efficient "sole-practitioners" rather than good physician capable of practising community medicine.

The discernible effects of traditional teaching methods on medical education are that the medicine as a subject got partitioned into the two disciplines, namely curative and preventive medicine. The partitioning effect has been so complete that one finds today these two aspects of medicine stand separated into all too rival compartments. So much so, that in actual practice, the preventive medicine does not find its rightful place in routine curative work of even Pediatricians and Obstetricians, who realise too well that their main chance and often the only chance of helping many of their patients in overcoming health problems, is by prevention (WHO, 1964.) Secondly it has led to the creation of two distinct sets of professionals, denoted by various nomenclatures such as, clinicians and nonclinicians, medical officers and health officers, paramedicals and health auxiliaries and so on. In the context of their social role each one fallaceously considered himself superior to the other and struggled under artificially seperated department with what was fundamentally one problem. It is our common observation that higher the heirarchy level greater the rivalry.

In view of the fact that the trend for specialisation has to be continued in the interest of advancement of medical sciences, and will continue whether one likes it or not, the sure way of ensuring a balanced knowledge of medicine with respect to its clinical, curative, social and preventive components to students is through integrated teaching—the organisation of which requires a bold, unconventional and imaginative strategy from clinical and S. P. M. departments of the medical colleges.

Social Pediatrics as Interdisciplinary department :

In the light of the above, emergence of social pediatrics as a teaching sub-discipline, within the frame work of Pediatric teaching could be considered as a step in the right direction. In reality it represents a practical approach towards practice of integrated teaching. Since the department draws teachers from allied disciplines of pediatrics, obstetrics and S. P. M , one could reasonably expect a balanced treatment to the speciality with respect to its clinical, curative, social and preventive components. It not only implements the interdisciplinary approach in day to day teaching programmes of medical students but also involves these interrelated sciences in carrying out field-based scientific studies in the area of M. C. H. . Further, the arrangement reflects not only the realisation of the relative importance of the other two disciplines by the pediatricians but also their honest will to seek lasting solutions to some of their pernicious problems of infection, growth retardation and malnutrition that dominate their clinical horizon, through multilateral approach. Because the problems of pediatrics invariably have their origin in obstetrics and defy permanent solution unless approached through social and preventive medicine angle, coalescence of the three disciplines under social pediatrics represents logical end result of interdisciplinary coordination.

Advantages of Interdisciplinary departments :

The trend towards establishment of interdisciplinary departments on lines of social pediatrics which envisage inclusion (not a mere participation) of S.P.M. within the frame work of hospital teaching, though belated, is a trend away from disintegration of medicine and needs fullest encouragement from all, especially from those who matter most in the realms of medical education. The long-term beneficial effects of such teaching situations, when properly handled, are likely to be on the quality and nature of teaching of clinical disciplines themselves but immediate gains are likely to be registered by the teachers of S.P.M. who hitherto have been and are still a part of an isolated department dealing with theory rather than the practice of community medicine.

As far as the pediatric discipline is concerned, the creation of social pediatrics as a hospital based teaching unit which functions as a viable, multiprofessional team under a unified command, represents a unique experiment in the area of integrated teaching. It has got a field practice area consisting of a network of M.C.H. clinics, primary health and rural health centres in and around Hyderabad city. The organisational set up which we have, at the Institute of Child Health, Hyderabad, by no means could be considered as ideal but under existing conditions, might be regarded as adequate. Our brief experience in the area suggests that with such multidisciplinary team with a teaching commitment in a specified area of education, firstly, much-talked of but less practised mutlidisciplinary teaching could be made a matter of routine rather than a specially organised inter-departmental co-ordinated effort in the teaching programmes of the undergraduates. The complexities of organising inter-departmental co-ordination, in a situation (like ours) where different disciplines function as seperate entities in a matrix of undergraduate medical education are too well known (Udani and Paranjpe, 1966; Marwah et al, 1971). Secondly, S.P.M. could be actively associated with programmes involving hospital participation which would impart service aspect (of the type which is valued more by both the students and the community) hitherto the "preaching without practice" department. And thirdly, the teaching of S.P.M. carried with pediatricians and obstetricians at the bed-side, in O.P.D. and at the peripheral M.C.H. complexes, which offer opportunities to practice "situational approach" of teaching could be of immense value to both the teachers as well as the taught.

The benefits accruing from such joint ventures, no doubt, are many but the most notable are obviously two. In the first place, it cuts across the artificial barriers inadvertantly erected by a faulty system of medical education between the teachers of clinical and social medicine and secondly, it helps the development of a meaningful service and research aspects in S.P.M., the lack of which constituted one of the serious defects in the science of public health (WHO, 1959). Hence the teachers of medical profession owe a great responsibility towards the society, since they are charged with the challenging task of training the doctors of tomorrow. Since a doctor of tomorrow is expected not only to be a "physician but also a philosopher and guide to his community", a broad-based medical education has to be tailored to provide the concept of comprehensive care

of the community to the students. Evidently this requires an intelligent integration of curative and preventive medicine at the academic level in the medical colleges irrespective of the fact that the trend towards polarisation still continues to be tremendously strong amidst the teachers of medical sciences.

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Role of Hospital in Teaching of Preventive and Social Pediatrics*

BY

Dr P. M. Udani

Director/Professor, Pediatric Centre, J.J. Group of Hospitals and Grant Medical College, Bombay S. Immediate Past President, Indian Academy of Pediatrics

Introduction

In developing countries, there are many hazards in child health, like poor housing, overcrowding, poor ventilation, poor sanitation, flies, inadequate washing and cleaning facilities, unhygienic and inadequate water, milk and food containers, air pollution, human and other reservoirs of infections, superstitions, traditions, false beliefs, apathy, lack of education, etc., all related to social, economic and cultural factors. Unless the health personnel consisting of teachers, students, nurses, paramedical personnel, social workers and others are intimately aware of the above mentioned problems of the community, they cannot do justice to its health needs particularly for the children. They have to learn the demographic data, feeding practices, various vital statistics, like maternal, perinatal, neonatal, infant, toddler, and the child mortality and morbidity; and cultural practices in the community so as to understand the impact of these factors on child health. It is only then that they can plan appropriate measures to solve the problems and give proper practical advice to the family. Teaching of Preventive and Social Pediatrics will have to be oriented to these social economic and cultural background.

Hospital Units

It will not be out of place to mention a few of the units of a Children's Hospital or Pediatric Department, where the emphasis on preventive and social aspect for pediatrics could be laid in the day-to-day teaching to the students. The usual units are: (1) the medical wards for the care of sick children, (2) isolation units for the treatment of communicable diseases, (3) neonatal and special care neonatal units for the care of the healthy and sick neonates and premature and low birthweight babies, and (4) out-patient unit for treatment of minor ailments and early diagnosis of major ailments. Apart from the above services, it is desirable to concentrate on the teaching of preventive and social pediatrics at some of the units like maternal and child health centre, school health clinic, and various follow-up clinics for newborn and premature babies. For the proper advice regarding the mental health problems and their prevention, it is desirable to institute similar teaching in the child guidance clinic. The above mentioned various units may exist only at a few big teaching pediatric centres. However, every teaching pediatric department should try to develop the above mentioned services so as to emphasize many facets of training in child health and care. This is particularly important in developing countries, where the emphasis on preventive and social aspects of child health is of paramount importance. However, even if the above mentioned units are not developed and the pediatric practice is at the level of hospital, or in an urban or rural community, or in small dispensaries, the practice of pediatrics should be an integrated preventive, curative and promotional one. Pediatrics is synonymous with child health and has the greatest scope of prevention of disease and promotion of health, physical, mental and social.

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In-patient Department

The usual or old concept of teaching child health problems in the in-patient department consisted in history taking, demonstration of physical signs to students, teach them how to elicit the physical signs, their interpretation and finally their synthesis so as to arrive at a provisional diagnosis; discuss differential diagnosis, treatment of the condition and incidentally teach the students how to deal with the child and parents. Today with our changing philosophy about the teaching of child health, we have revised our programme at every level to emphasize social, economic, environmental, nutritional and cultural factors, for example, in the dietetic history of the child, not only the quantitative and qualitative aspects of the diet are studied, but the students are taught to learn the food habits of the family with feeding habits of the child in particular, get mother's ideas and knowledge about foods, their values, effects and traditional beliefs about them. Also careful attention is paid to the available foods to the family as this is often related to the economic condition and cultural beliefs. What is studied in the hospital about the dietetic history of the child and the family should be further extended to the study of feeding practices and the various reasons behind such practices in the community. With this approach of the teachers and students in the dietetic history, there is much practical information of the diet of the child in the family as related to social, economic, and cultural factors. Also this leads to the much more practical advice to the mother about the diet of the baby from the available foods, and mother could be given dietetic education of practical value. Similarly when the students take the social history he gives proper attention to the size of the family, its income, particularly *per capita* income and then can explain the need of family planning and planned parenthood to the family he is dealing with and get himself enlightened on these aspects of the problem. Also parents can be referred to the family planning clinic for necessary advice and motivation. In the in-patient routine history sheet, there should be a special form to get the detailed data on the social, economic, environmental, cultural and dietetic aspects of the family.

Out-patient Department

As mentioned before the out-patient department in developing countries is usually very much overcrowded and often has poor physical and other facilities. The out-patient department provides services to children mostly with minor illnesses, detect major illnesses at an early stage, and is meant for the training of the students in making quick examination, quick diagnosis and treatment. Often he has to decide whether the apparent minor symptoms are of major disease, and thus the child requires either admission to the hospital or requires special diagnostic procedures. The out-patient teaching is very important for the students as after their graduation, they are going to deal with similar problems in their practice in a community. Hence they need good training in dealing with these types of problems. Because of heavy service load and overcrowding, often the out-patient service is not properly utilized for teaching integrated preventive and curative pediatrics. In spite of these difficulties, we must find out ways and means to convert the out-patient department into an integrated preventive and curative pediatric clinic. We may not be able to provide preventive and promotional services to all the children who attend the out-patient department. However, the students should be motivated towards the integrated preventive and curative aspects of child care so that he practices the same as a future basic doctor of the community. At our out-patient department we attempt to immunize large number of children who usually attend the department for minor illnesses. In infants and children who are not ill, direct B.C.G. vaccination is given and after assessing the immunization status of the child we carry out all the immunizations at the out-patient level. The mothers could be given incidental teaching on immunizations when her child is being immunized. Also the teachers in our department have the practice of giving incidental health education and nutritional education to the mothers while discussing the care of the child. It is desirable that

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every out-patient department in developing countries should have physical facilites, personnel and equipment so as to routinely provide immunizations to children and health and nutritional education to parents. The expenses incurred in developing these programmes are of great benefit from the preventive point of view and for the motivation of the students to practise integrated preventive and curative pediatrics throughout their lives. In this connection, it is desirable to give special attention to children under five years where there is maximum mortality and morbidity, and which group could be most benefited by such an approach. It is desirable to provide a special card for every child which the mothers can keep with themselves and bring during every visit to the hospital. In this card, there is information about the progress of the child's growth, both height and weight etc., details of immunization, record of the common illnesses particularly communicable ones, the allergies and any special handicaps. Such a card can be supplied to the family at a nominal cost. Often the out-patient records are difficult to maintain at the hospital level, and in such circumstances, the card will have special value in improving the services to vulnerable children and motivation of the students towards preventive aspects of child health.

Home visits of the Students (in relation to the Child in the Hospital)

It is important to study the environments in which the child is brought up so that we know under what conditions the child developed the disease. Hence the students preferably with his teacher from the departments of pediatrics and preventive and social medicine should make home visits to study the physical environments like ventilation, light, sanitation, water supply, milk supply, etc., and study details of food intake, money spent on different items of food, fly and other insect menace, survey contacts as for example in a case of tuberculosis, and also get details of the family, number of people, their health, their attitude towards child's illness, drugs and modern medicine, etc. When these problems are later discussed, the teachers and students would be much better exposed to the problems of the family and the community, learn the place and conditions in which the child got sick, and develop practical human approach to problems and their solutions. In the developing countries, with a dearth of teachers, heavy service load, it is not possible for the teacher to accompany the students at home every time. However, for every batch of students, a few exemplary visits are not impractical.

Where to train Young minds in the Hospital Campus?

As mentioned before, at every level, there should be an emphasis in preventive and social aspects of child health. However, a concerted attempt should be made at some of the places in the hospital.

1. *Side-room Clinic:* When the students are in the in-patient department, they should have intensive case-study at least twice a week. Such a case discussion can be held in a side-room clinic of the hospital. The clinic should last for 1½ hours each time. The common problems and conditions should be discussed in such a session. However, students should be active participants throughout the session. The students will remember well what they themselves have done and actively participated. In such a session there is intensive case study which not only emphasized the clinical aspects, but equally emphasized the social, economic, nutritional and cultural aspects of the problem. Such intensive 24 sessions in a three-month period in the ward will go a long way in emphasizing the study of the common problems of the community.

2. *Clinico-Social Conference:* In our experience, such a conference has proved a very useful teaching method in emphasizing the teaching of preventive and social aspects of the child health problems to the students. It has proved a great stimulus to them in drawing their attention to these aspects of the problems. The conference is organized by the students with the guidance from their teachers of pediatrics and preventive and social medicine. One to two weeks prior to the conference, a batch of three students

will collect the clinical data of the case in the hospital and shall visit the home of the patient to study the physical, social, economic, cultural, dietetic, nutritional and other data of the family. They will study the income of the family, the expenses of the family in detail, particularly find out how much amount is spent on food and health and how much on various ceremonies. They will get an idea of the food habits and the way the food is prepared and taken by the family members. In cases like tuberculosis, they will study the family and contacts by history, physical examination, tuberculin survey, blood and sputum examination and even take them for a mass miniature radiography. The conference is started with an introduction by one of the students in charge, and later will be followed by clinical data in brief. However, there will be detailed presentation of the data of the family pertaining to social, economic, nutritional, cultural, environmental and other aspects. After the presentation of the full data, the students will actively participate in the discussion. However, often here the guidance of the teacher is necessary. After the initial discussion by the students, the teachers of pediatrics and preventive and social medicine will give the comments, and the conference is finally summarised by the students and the teachers. Often when a case of tuberculosis is presented at the conference, there will be discussion on the following aspects of the problems.

1. How did this child get the infection?
2. From whom?
3. Could it have been prevented?
4. Why was immunization not given?
5. What were the attitudes of the parents to immunization and what were the difficulties?
6. Discuss the solutions to the various problems.
7. The whole family is immunized if necessary, and chemoprophylaxis, primary and secondary is given, if indicated.

During such a session there will be a discussion on the incidence of tuberculosis in the community to know the extent of the problem in the community.

At the subsequent clinico-social conferences the work done by the students, teachers, paramedical personnel and the agency involved, e.g., health department, is reviewed to detect the difficulties encountered at various levels, to find out what has been successfully done particularly in the fields of immunization of the family, and dietetic and health education. Also advantage may be taken off and on to get various non-medical personnel from the university faculties, like the economist, social scientist, nutritionist, demographers and even agriculturists. Discussion of the problems by such diverse specialists, enlightens the minds of the students and teachers as the problems in a developing country are so much related to these educational fields.

It is usual to get the clinical material from the low socio-economic groups, and hence the discussion is predominantly limited to the problems of low socio-economic group of population. However, it is desirable to select at times also other socio-economic groups so as to study their problems which are more likely to be presented to a general practitioner. Moreover the different socio-economic groups provide good comparison of the data obtained. Also the student will learn that it is often easier to implement the advice in the upper and middle socio-economic groups and only limited advice is followed in low socio-economic groups.

The common problems which we discuss in clinico-social conferences are (*i*) malnutrition, (*ii*) anaemia, (*iii*) other common nutritional disorders like rickets, vitamin A and B complex deficiency, scurvy, (*iv*) diarrhoeal disorders, (*v*) tuberculosis, (*vi*) communicable diseases, diphtheria, whooping cough, measles, poliomyelitis, typhoid fever, hepatitis, etc., and (*vii*) parasitic infestations, and (*viii*) handicapped children, etc.

3. *Neonatal Conference:* This is another teaching exercise held once in two weeks for a period of 1½ hours, in a three-month term of pediatrics. The idea is to stimulate interest in the newborn which is usually

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neglected in the developing countries, focus on prevention of disease from perinatal period, bring about collaboration of departments of pediatrics, obstetrics and preventive and social medicine, as well as bring in medical personnel like midwife, social worker, public health nurse, nutritionist and others. This is a good example of inter-disciplinary teaching organization.

The programme of a neonatal conference consists of presentation of the clinical data in brief and detailed data on the social, economic, environmental and cultural aspects of the family. Initially there is a discussion by the students and the discussion by the paramedical personnel. This is followed by comments and discussions by teachers of obstetrics, pediatrics and preventive and social medicine. Throughout the session there is emphasis on prevention of the disease, health education, and to a lesser extent on routine treatment. During 6 neonatal conferences in a pediatric term of 3 months, care of the healthy child, low birth weight baby and common perinatal and neonatal problems are discussed with some presentation of the data on neonatal and perinatal morbidity and mortality.

4. *M.C.H. Centre:* One of our Maternal and Child Health Centres is in the hospital premises. In such a centre, the obstetric staff members followup the mothers from the antenatal period and look after them during the intranatal and postnatal periods, while the pediatricians look after the babies during the neonatal and postnatal periods. With such a collaboration of the departments of pediatrics and obstetrics, many useful sessions could be held to discuss the various problems of pregnant mothers, particularly affecting the child, once in three to four weeks and useful discussions could be held on these problems by the triple disciplines of obstetrics, pediatrics and preventive and social medicine, with active participation of the students.

There are many areas in which the students could be trained with the help of departments of pediatrics, preventive and social medicine and at times obstetrics and department of family planning and planned parenthood. Other related departments can participate depending upon the subject. However, the motivation of the students, their knowledge, practical implementation and success of the programme will depend upon the stimulation by and participation of the teachers. Students usually take the example of the teachers and they will learn what the teachers do. Hence active participation of the teachers in different departments, particularly pediatrics and preventive and social medicine is vital to the success of teaching of preventive and social pediatrics. The participation of the students and teachers could be had at various levels and units in health education, nutritional education of the mothers including preparation of foods for infants, immunization teaching, family planning, etc., for the proper training of students in these aspects. It may be emphasized that curative pediatrics at any unit is only an initiation to teaching of preventive and social pediatrics.

Difficulties

There are bound to be lot of difficulties in the organization of the teaching of preventive and social pediatrics to the students. Some of them are: (1) heavy service load, particularly in the out-patient department, (2) lack of adequate number of pediatric and other teachers and paramedical personnel specially interested in preventive and social pediatrics, (3) lack of adequate number of teachers in departments of preventive and social medicine, particularly those oriented to M.C.H. problems in developing countries, (4) lack of adequate training period in pediatrics in undergraduate teaching. The students usually attend the morning sessions from 9 to 12, and it is very difficult to squeeze in everything in this short period. It is desirable to have a full-time posting of students in pediatrics so that they are able to spend the whole day in the department. This can only be done by a full block teaching. (5) Often there is inadequate evaluation of the teaching programme either at the level of the department but more so in the lack of assessment of the students in pediatrics by the pediatricians in theory and practicals in the final qualifying university examination. (6) Lastly not

The experience of the faculty seems to be that a close co operation with the interns is required; that short-term programmes that can be completed within a 2-month period are essential for the group as a finished programme leaves a feeling of satisfaction among participants.

It is such survey that bring the graduates into close relationship with the rural people, produce an understanding of the existing conditions and creating, it is hoped, a sense of curiosity to fact finding and research in years to come.

Paediatrics in undergraduate Medical Education

BY

DR. PRAN N. TANEJA, Professor of Paediatrics and

DR. OM. P. GHAI, Asst. Professor of Paediatrics.

Paediatrics is a branch of medical science which deals with child care, both in health and disease. Its place in medical education varies greatly in different countries of the world. Because it is young as compared to other disciplines, its entrance into the curriculum at the undergraduate level has been more by superimposition than by design. The inception of paediatrics in India has only been possible since the last decade and a half. With the changing trends the movement has been away from 'curative' paediatrics i.e. the one dealing with treatment of diseases of children to that of a comprehensive subject in which the human being as a whole, during a certain age group, in all its aspects is the focus of attention.

The main objective of medical education should be the preparation of a good basic doctor who is able to serve the community as well as the individual. There are certain prerequisites necessary to that end, viz., (1) awakening in the student an interest in the human being, the family and the community; (2) the development of the habit to think and self-education; (3) to create scientific curiosity; and (4) to acquire specific knowledge and skills.

Every general practioner, therefore, must not only be alive to the special needs and health demands of the community in the country in which he lives, but also be able to discharge them efficiently.

There are several reasons as to why paediatrics is most suited for a proper place in the training of such a general basic doctor :

(a) India is a large country with a population of over 436 millions. It has been estimated that children constitute as much as 160 millions. Their demands need special attention.

(b) India still has a very high infant morbidity and mortality. It need hardly be emphasised that infant mortality of any country is the index of national health.

(c) Paediatrics cannot be defined as a speciality either of an organ, system, a technique, a function or a group of diseases. It is the application of general medicine and perhaps much more, as applied to a certain period of life.

(d) By no means of imagination is a child a 'miniature adult' or a 'little man'. Childhood is a biological period of every human being especially characterised by continuous process of growth and development from birth through adolescence.

(e) There are many social, environmental and congenital disorders peculiar to this age group.

(f) Many disease problems of later life have their beginning in childhood and a study of paediatrics gives one the best opportunity of studying the natural history of disease.

g) Paediatrics is the only field in which the doctor gets an opportunity of applying family care in its natural environment. The student therefore is ideally placed, while studying paediatrics, to study the social and environmental factors which influence human well being.

quirements of Teaching of Paediatrics

Besides the obvious need for truction in the diseases peculiar children or of children in certain as or of diseases common to both ilts and children, there are certain cialised fields which are essential. y programme of paediatrics teaching should include knowledge about physical, mental and emotional growth and development, genetics, infant and child nutrition, methodology of examination and treatment of children with emphasis on the art of handling children and their parents, supervision of the child in good health and for the promotion of positive health, problems of the handicapped child - both physically and mentally, problems of the foetus and the new born including the premature and lastly adolescents. Besides, there are many other situations with which a basic doctor has to be familiar such as marriage counselling, school health programmes, physical and emotional problems of puberty and adolescence. The field of prevention is specially applicable to children and immunization procedures and prevention of diseases in general has its best application in this age period. The doctor has also to be well acquainted with the special services available for child welfare such as baby welfare centres, creche, adolescent clinics, etc.

It would thus be obvious that the training of every medical undergraduate should include a substantial time spent in the learning of paediatrics. It is a strange paradox that the discipline of paediatrics appears to be least developed where it is most needed and the number of paediatricians is the smallest where problems of child health are most pressing. Whereas 40% of any doctors' patients, time is occupied by the care of children, in the average medical training centre in this country he hardly gets more than 2% of his training period for the learning of this discipline. In order to have an adequate coverage, more

time is necessary and the allocation of at least 1/4th of the clinical time to paediatrics seems to be a reasonable proportion. It is very essential that adequate personnel and facilities must be available for the proper use of such teaching time. Instructions in paediatrics should commence with the teachiug of growth and development and should run throughout the clinical years both independently and in collaboration with other departments. Further, there should be a period of concentrated paediatric training towards the last part of medical studies. It is indeed sad that the Indian Medical Council has not realised the importance of this discipiine and has very often dubbed it along with other organ specialities. Even in its recommendations, the Council states that every medical student should spend a minimum of one month in the paediatric wards. It need hardly be emphasised that paediatrics cannot be taught only in the wards and one month is hardly any time even to orientate a student in this major discipline. The teaching methods may include as few as possible formal single or multiple teacher lectures but more of seminars and a well organised paediatric clinical clerkship. It is during this period that the student is exposed to the out-patients service, the various welfare clinics and is also acquainted with the immunization procedures. He must also be made to spend some time in the care of the newborn and in the specialised care of the premature.

The All-India Institute of Medical Sciences, realising the necessity of giving a rightful place to paediatrics in the undergraduate curriculum, has already evolved a programme which goes a long way in meeting the principles enunciated above. Paediatrics forms at the Institute an independent discipline and has approximately 12% of the total clinical time. Its instruction starts in the first year with growth and development and goes through till the end with an essential pre-registration internship of one month. The department collaborates with all other clinical disciplines in the teaching of common problems such as clinical methods, infectious diseases, etc. There are additional specific paediatric topics. The total clinical clerkship of every student works nearly to 4 months in the department during which time he is rotated through the various sub-sections of paediatrics as already outlined. Another feature of this training programme is the day to day assessment which has a significant part to play in the final performance. The students, of course, have to take a separate examination both theoretical and clinical in paediatrics.

Appeal to Medical Educationists

It is obvious that paediatrics is a comprehensive discipline dedicated to the care of the whole organism and fulfil the basic aim of a rational medical teaching ideally. It supplements rather than takes away anything from the teaching of general medicine in all its facets. It offers a helping hand to the surgeon in familiarising the students to the management of water and electrolyte disturbances, to obstetrics by collaborating in the care of the newborn and premature and other specialised disciplines in fully co-operating with them. If we have to reduce our infant mortality, our poor nutritional

standards in the school-going children and to prevent the communicable diseases, we ought to train the students in the right direction and adequate time allotment for paediatrics therefore becomes essential. It seems odd to send out a qualified doctor from a medical school without his having any idea of how to deal with 40% of his clients.

It is of fundamental importance to realise that paediatrics is not a speciality ; in fact, if there is any generality it is paediatrics. It is hoped that the medical educationists will realise the changing times and give adequate portion of the clinical teaching time to this very important yet long neglected field of undergraduate medical training.

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