

'The School Health Service'

by Dr MD Hussain

THE School Health Service should be defined as a system of delivery of comprehensive health care to school-going children. The school health usually should include the children at the following levels:

1) Children at Patshala/Maktab level (Age group, KG)

2) Children at primary school level (Age group from class I to V)

3) Children at secondary school level (Age group from class VI to X)

The HSC group or at the college level, that is the 11th & 12th graders must have a separate health service arrangements which is not normally counted as School Health Service in our country. This present arrangement is absolutely a contradiction of health protective system for children of school-going age. In most of the foreign countries the 11th & 12th graders are very much an integral part of the school health system.

Therefore, we have to define initially the age group to be covered by School Health Service in our country. As there is a variation of health needs in each group, our aims should be to provide the service according to requirements. As a matter of fact, it would be more appropriate to call it health care for the school-going aged group of the population. This should therefore mean that it is not something new to us rather a part of overall child health care, which actually should begin from the mother's womb and continue till completion of school years.

The major components of school health programmes are (1) Health education (2) Health environment and (3) comprehensive school health care.

The school health team should normally include the School Medical Officer, the School Health Nurse and an Assistant or a Dispenser. But the teachers and the students have to have an active role to play for proper implementation of school health programme.

Health Education: Health education to the students is a

must and this must be done by the teachers. So the teachers training programme must include in their syllabus all aspects of health education, which should be directed mainly on knowledge of responsibility of health, all aspects of prevention, environmental health and family life. More over, text books must have basic health lessons included in it.

The school medical officer/school health nurse should feed the teachers from time to time to keep themselves up to date about the latest knowledge and requirements of school health education. The major drawbacks of proper school health services are due

concept of comprehensive school health care should include the promotion of health care aspects, the protection of health care and the most modern health care facilities at the school, ensuring all basic curative services including mental and psychological health care. There should be enough facilities to follow up chronic illnesses and diseases such as rheumatic fever, epilepsy, diabetes mellitus, pulmonary tuberculosis and mental retardation. Some arrangements for specialist examinations of eye, ENT and dental care should also be available near at hand. A stand-by school ambulance is a must for proper transportation of complicated cases to a

the handicapped school children should preferably be dealt with at the Special Kind of School.

Present Status of School Health in Bangladesh: The School Health Programme in fact had started first in Bangladesh (then East Pakistan) in 1951 and from 1951 till 1972 there were 25 school health clinics established in 19 old districts of Bangladesh. At present out of these 25 school health clinics 23 are run by the government and the other 2 are run by the Municipal Corporation of Chittagong. Each school health clinic usually should cover a student population of about 3000/ 5000. The present schedule of the school health programme allows each school medical officer to attend the main school clinic, where he/she is stationed and should also visit the nearby schools as per previously-planned programme. The UNICEF at present assists this school health programme in Bangladesh with limited supply of drugs, diet supplements and school equipments.

In the context of Bangladesh, the school health services can very well merge or partially compromise with some components of the primary health care, which is probably the basis of essential health care or coverage at all levels. The school health therefore should maintain a very good referral system. The child health care, the EPI programme and the nutritional care components of primary health care can very well be assisted or integrated with the school health services programme. This kind of limited integration will make implementation of school health programme easier and within the reach of the available resources of the country.

It is understood that the present Ministry of Health in planning to expand the activities of school health services all over Bangladesh the help of foreign aid.

— Dr Hussain is vice president of Public Health Association, Bangladesh.

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to lack of communication between the school health team, the teachers and the students. The failure to motivate the teachers, students and the parents or guardians of the students about the importance of health education will act as a great hindrance to successful implementation of proper school health services.

Healthy Environment of the School: A healthy environment should include suitable school building, its proper siting and good construction, spacious class rooms suitable chairs and desks, glareproof black boards, common room with indoor games facilities, playground for outdoor games facilities, good lighting arrangements with proper ventilation, sufficient pure water supply for drinking and washing purposes, sufficient urinal and latrine facilities, sufficient facilities for collection of refuse and its proper disposal and proper drainage facilities. All these are basic needs for a healthy environment of the school.

Comprehensive School Health Care: The present day

nearby hospital and to attend specialist appointments.

To facilitate proper nutrition, a balanced mid-day meal or improved school tiffin at the school break hours should also be provided to supplement nutritional needs of the growing children. The school hostel meals should also be supervised and frequently checked by the School Medical Officer or School Health Nurse. This is a must and regular stool examination of the school hostel catering staffs on 6 months basis are to be strictly followed.

The School Health Clinic should attend all routine day to day ailments of the school students. The routine annual health check up should preferably be arranged to detect any new medical condition within the student population of the school. This new medical condition should promptly be attended by the concerned specialist. The parents guardians and the Principal of the school should be informed about the outcome of this medical condition. The rehabilitative care and the care of

Overcoming Malnutrition's Damage to Brain Power

by Nevine Antonios

EVERYONE knows malnutrition decreases resistance to infectious disease and leads to poor economic productivity. Improving nutrition can both improve health and raise production. But what about the effects of insufficient food on children's mental functions? Must malnourished children inevitably grow into adults with sub-optimal mental capacity? Studies indicate nutrition does have an effect on such key functions as memory, problem-solving, learning and

romental cues. During the late 1960s and early '70s, researchers assumed malnutrition produced brain changes that led to often irreversible learning impairment.

But more recent studies indicate the idea of permanent damage should be abandoned. The current hypothesis is that malnutrition does not directly impair the basic ability to learn, but has a major effect on the behaviour of children

A study done in Mexico to assess the effects of a feeding programme on child behaviour and mother-child interaction concluded that children whose diets were supplemented with proteins and calories demanded more parental attention and became more independent and active.

The study indicates a primary effect of malnutrition is to make the child withdraw from active participation in his environment, and it is this

ability to learn, but instead produces changes in the behavioural competencies of a child. There should be hope that the changes can be reversed through programmes that improve children's nutrition.

More is involved, however. Research into nutrition and psychological development suggests that although simply improving a child's diet can lead to cognitive changes, there is greater intellectual development when the child's diet and psychological and social environment are enriched together.

The younger the child and the longer the nutritional and educational interventions, the greater their impact.

School feeding programmes would appear to be the answer, but most evaluations so far have been flawed and failed to convince policy-makers that programmes will succeed in improving cognitive development of malnourished children in developing countries.

The studies have lacked methodological rigour and failed to take into account such moderating variables as socio-economic factors.

Instead of measuring the effectiveness of school feeding programmes on malnourished children, they drew inferences about malnourished children from data on well-nourished children.

Two studies in Guatemala and Nepal that were methodologically sound in all respects now suggest that school feeding programmes do make a significant difference in the cognitive development of children, but more research is needed.

Operational research should compare the efficacy of programmes that provide only school feeding with those that include an additional intellectual development component.

It is a job well worth doing. And, because work productivity is so intimately linked to cognitive development, it will be worth the while of top-level policy-makers to pay attention to all attempts to remove stumbling blocks to the intellectual progress of the young.

— The FAO Review



How much this Ethiopian child weighs will have a bearing on his brain powers as well as physical health.

using language, and thinking in the abstract. It also has a bearing on the level of a child's cognitive performance, including the ability to learn categories, to process and structure information and to learn and react to social and envi-

through disfunctional changes in attention, responsiveness, motivation and emotionality.

A malnourished child will interact less with the people around him or her, and be less likely to seek out and respond to opportunities for learning.

that causes changes in cognitive abilities.

Hope for reversing damage
If malnutrition doesn't lead to irreversible brain damage and direct impairment of basic

Senegal: Early Progress, a Long Way to Go

by Francoise Gerber

TWICE a month, women and children gather for medical consultations in this small village in the Khombol district. As babies are weighed and vaccinated by visiting health care personnel, pregnant women wait patiently outside Mbayang Niang's consulting hut.

For years, Mrs Niang has been the village's traditional birth attendant. But because of her recent training, the expectant mothers of Keur N'Diaga Sarr have a better than average chance of escaping the fate of

identifying danger signs and women who may require immediate medical attention. Though most traditional birth attendants are illiterate, they are taught to record basic information on illustrated health cards. "Teaching women who have never held a pencil to record information is the most difficult aspect of the training," says Mr Diallo. But they do manage, and eventually, each of them is able to follow-up on

the mother first."

With support from UNDP, New York's Columbia University and the World Health Organization, Senegal was one of the first developing countries to establish a national action plan to reduce maternal deaths.

This is significant in a country where over 90 per cent of the population is Muslim, and where women in most situations are discour-

tees could be created," says Dr Gueye. "Four or five members could be trained to identify risks and to help other women in the community."

On the remote island of Falia on the Sine Saloum River, one such group is desperate for a trained birth attendant. More than three hours by motorboat from the nearest health facility, and often lacking transportation, the women are ill-equipped to deal with an emergency.

While cultural factors are a serious consideration, most health experts say that upgrading the country's medical infrastructure could make a big difference in the short term.

"Improving women's status and teaching them to read and write is important, but this does not necessarily reduce maternal mortality," says Deborah Maine, director of Columbia University's prevention of maternal mortality programme.

As in most developing countries, the best medical care in Senegal is found in the capital and in other large cities. But with recent cuts in the health sector, resources there are strained to the limit. At Le Dantec Hospital in Dakar, Dr Fadel faces a new challenge every day. "We don't have blood, we don't have medicines, we lack personnel and supplies. I even had to close my surgery unit," he says. "And the first to suffer are women and children." — The Human Development Magazine (UNDP)



Training of traditional birth attendants in Senegal has helped reduce maternal deaths.

some 1,800 Senegalese women who die each year from the complications of pregnancy and childbirth.

Most women in Senegal do not recognize danger signals during pregnancy. Fever, bleeding, or pallor and dizziness are usually considered normal.

"Our initial idea was to train pregnant women to identify risks and possible complications," says Abdou Diallo, director of the training centre for traditional birth attendants in Khombol. "But soon we realized that it would be easier to train birth attendants, who have special status in the village and are trusted."

The one-month training is part of a pilot maternal and child health programme funded by Dakar University that covers 10 villages in the Khombol area.

It focuses on prevention:

women entrusted to their care. "I know what to do," says Mrs Niang with a smile. "I look for signs of complications, and if I see a problem, I refer the woman to the rural maternity ward." In 1990, of the 600 women referred to the Touba Toul clinic, not a single woman died.

The same is true of the many women who delivered at home in the Khombol area that year.

Yet in many parts of the country, fighting maternal deaths is still an uphill battle. Dr Fadel Diedhiou, chief of the maternity ward at Le Dantec Hospital in Dakar, was among the first health specialists to raise the issue. "Most maternal and child health programmes focus essentially on children," he says. "Only recently did we realize that a better way to protect a child is to protect

aged from taking decisions on their own."

"We have three objectives," says Dr Abdoulaye Gueye, national director for the plan. "We aim to improve the whole medical system in order to offer better care for women, to build-up their socio-economic status and to strengthen family planning."

Studies show that very few rural Senegalese women have knowledge about contraception, but most of them say they would like more time between births. Illegal abortion is a major cause of maternal death.

"Women are rejected by society if they become pregnant without being married," says Dr Fadel. "So they try to get rid of the child by any available means. Very often they arrive at the hospital just in time to die."

"Health awareness commit-

Vaccine to Prevent Pregnancy

by Allan Thompson

THE world's first birth control vaccine proven effective in humans has been developed in India. It is given by injections and lasts a year.

Recent tests show the vaccine prevents pregnancy, says its inventor, Professor Gursaran Parshad Talwar, who is Director of the National Institute of Immunology in New Delhi. He is being suggested as a Nobel Prize candidate for his pioneering work in birth control.

The vaccine is not meant to sterilise women, but rather to be a reversible method of birth control. Talwar's tests show it has no side-effects and allows all the normal bodily functions to continue while preventing conception.

"This is an important milestone, but there is still a lot of work to be done," Talwar said in an interview.

"I hope that before the decade goes out, we will have a usable vaccine. I live in a country which makes up a big part of humanity and where population is increasing at a rate of 17 million per year, so this is vital."

"What is good for India would also be good for every other part of the world."

Talwar said he is already busy working on modifications to the vaccine that will make it easier to take and will extend its effectiveness.

As it now stands, the vaccine must be given in three injections, six weeks apart. Then a booster shot must be given each year. Talwar is aiming for a vaccine that can be given in one shot and lasts a year or more.

That is because the whole purpose of the vaccine is to make birth control easier than existing methods that are

tem to prevent pregnancy. Others may have dreamed of such a thing, but I had the idea."

The vaccine works by effectively tricking the body into carrying through with the menstrual cycle that flushes out the uterus — even if an egg has been fertilised.

"You don't interfere in the body's natural process, you

To combat the overwhelming problem of population growth, an Indian scientist has devoted two decades of his life to developing a birth control vaccine. His vaccine, now proven effective but still not ready to be marketed, can last for a year or more. As Gemini News News Service reports, there are now suggestions Prof. Gursaran Parshad Talwar should receive the Nobel Prize for his work.

sometimes not practical especially in the Third World.

"Condoms and pills require constant motivation and have to be available at the time and place of need," Talwar said. "JUDs result in extra blood loss for women who are often already anaemic and vasectomy or tubal ligation are by and large permanent procedures."

Talwar first got the idea for a birth-control vaccine in the early 1970s and began his work in 1976.

He said: "The concept is to mobilise the body's own sys-

tem to prevent pregnancy. Others may have dreamed of such a thing, but I had the idea."

The vaccine works by effectively tricking the body into carrying through with the menstrual cycle that flushes out the uterus — even if an egg has been fertilised.

"You don't interfere in the body's natural process, you

don't medicate the woman every day," he said.

Talwar insisted this is not an abortion vaccine. "The intervention is taken before implantation."

Key to the way the vaccine works is the molecule called human chorionic gonadotropin, or HCG. The molecule is triggered and produced by the female body at the moment of conception. Its job is to make sure the human embryo becomes implanted in the uterus.

Talwar's innovation is taking some of those HCG molecules and making a vaccine that negates the usual impact of the HCG.

"The rationale is to reduce the antibodies which circulate in the blood and induce HCG," Talwar said.

"You see, the HCG molecule is the one that gives the woman's body the signal not to menstruate. So if you can cut off that signal, then she menstruates and there is no pregnancy."

Talwar conducted seven years of studies with primates — monkeys and baboons — to establish the vaccine is reversible and free of side effects.

Later Talwar moved to clinical trial with humans, first with women who already had as many children as they wanted, and later with women who wished to remain fertile.

This phase of testing involved 200 women who had at least two children, were sexually active and had husbands with normal sperm counts. The trials were carried out in

India, Finland, Sweden, Chile, Brazil and the Dominican Republic.

After proving the vaccine was safe and its effects reversible, Talwar moved to second-stage trials to verify that it works.

By May 14 1992, after studies involving 88 women in India — spanning 821 menstrual cycles — the vaccine had only allowed one pregnancy, a result scientifically adequate to declare it an effective birth control.

"That was the first time any birth control vaccine has been demonstrated effective in humans," Talwar said.

Originally, the HCG molecules needed to make the vaccine were extracted from the urine of pregnant women in their first trimester. Talwar is now using genetic engineering and cloning to produce the HCG molecules needed for the vaccine on a massive scale. Eventually the vaccine itself will be made entirely using genetic engineering.

"Our aim would be to make a cheap, and affordable vaccine," he said. "We're on the right route, but we're not there yet."

Talwar did some of his work in co-operation with the Population Council in New York and over the years of his research, received \$4.5 million in funding from Canada's International Development Research Centre (IDRC).

Tom Wegmann, a Professor of Immunology at the University of Alberta in Canada, was one of the scientists to advise the IDRC on the merits of Talwar's research. Said Wegmann: "I've been working in this field since the early 1970s and I think this is of profound significance."

"In my opinion this project is going to be a monument of how one should do such things. A Nobel Prize is a real possibility," said Wegmann.

"We in the developed world don't think we have adequate contraceptives, and in the developing world matters are even worse."

"This particular vaccine has had the most extensive toxicology testing of any such vaccine ever and it's important that Canada stuck its neck out and supported this project for many years when others wouldn't touch it."

Talwar is also working on a male birth control vaccine, which is now in the animal test stage.

— Gemini News

Surgical Adhesives

An adhesive for use in surgical procedures has been developed by researchers at the French National Blood Transfusion Centre, reports CEDUST, a French Embassy newsletter.

The adhesive comes in two separate syringes, just like the ones that come in two tubes in "do-it-yourself" stores. One of them contains the different freeze-dried elements causing human haemostasis (Blood-clotting) and the other contains thrombin, that which is the other element used in blood-clotting. Combining the two products causes the formation of fibrinogen. An important fact is that this adhesive, made of human proteins, does not present any compatibility problems.

It can be used in all cases when stitches need to be reinforced, when complete air or water-tightness needs to be ensured, or, more simply, ev-

ery time bleeding has to be stemmed. Its range of application is vast, with few areas of surgery in which it does not contribute an extra measure of security.

It is part of the equipment used by ear, nose and throat surgeons, plastic surgeons (for skin-grafts, in the application of strips of skin, and for invisible scars), bone surgeons (for bonding difficult fractures and attaching tendons), and for treating seriously burned patients.

Neuro-surgeons use it, each time they have problems sewing up the meninges, but surgeons of the digestive tube are the keenest, when it comes to stitching the intestine, or for use in the case of anastomosis in colo-rectal surgery where there is a very high risk of post-operational rupture.

The best benefits might be in surgery of the liver, which is

rich in tiny blood vessels and in which it is almost impossible to stop bleeding. Whatever care is taken, bleeding is inevitable.

Surgical adhesive has removed this great stumbling block, enabling this kind of surgery to make a tremendous leap forward and become commonplace, while the success of liver transplants increases month by month.

There is thus a huge potential market and annual production amounts to 100 litres, although it is an expensive product, a millilitre costs in France, the equivalent of Rs 20 to 2,500. An ENT operation needs about 0.5 ml while at least 5 ml are required for a liver operation. However the demand is expected bring down the price. A new "ready-to-use" adhesive, not requiring any mixing, is also expected to emerge soon, the CEDUST report said.

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