

Save a Life, or a Child's Sight

by Marie-Christine Comte

EATING 50 grams of cassava leaves — the equivalent of a large salad — or a mere three grams of red palm oil per day could prevent a child from going blind. Yet half a million children are destined to blindness, and two-thirds of them to die, for lack of a daily supply of the crucial amounts of vitamin A contained in such common tropical foods.

These children could also be saved, once their diet deficiency has reached the extreme stage where blindness is possible, by immediate emergency intervention in the form of a series of capsules of 200,000 international units (IU) of vitamin A, taken on two succeeding days, then again in four weeks. But such capsules are hard to come by in the parts of rural Africa, Southeast Asia and the western Pacific where the vitamin A deficiency condition known as xerophthalmia (Greek for 'dryness of the eye') is most common.

Prevention, through nutrition education and consumption of locally produced vegetables and fruits that are rich in vitamin A, makes far more sense than even the simplest and most effective of emergency cures.

Critical roles

Vitamin A plays a number of critical roles in the human body, and is especially important for young children. Without enough vitamin A, a child's bones won't grow and develop normally and appetite will diminish.

Children with even a mild vitamin A deficiency can develop acute respiratory illnesses and diarrhoea, because the tissues lining the passages to the lungs and stomach need vitamin A to stay moist and healthy. Deprived of the nutrient, these surfaces lose their ability to protect the body from infection. Researchers are also studying a probable link between vitamin A and the immune system.

But the most appalling result of vitamin A deficiency is witnessed in the advanced stage of xerophthalmia, which follows the earlier symptom of night blindness. Xerophthalmia destroys the cornea of the eye (keratomalacia) and can cause one or both eyeballs to disappear completely.

It takes a healthy adult some 12 to 18 months to develop the first clinical signs of vitamin A deficiency. But children can begin suffering in only a few days or weeks, because their reserves of the vitamin are meagre compared to their daily requirements.

Pre-school children, who need three times more vitamin A per kilogram of body weight than do adults, are most at risk. Boys seem more vulnerable than girls, possibly for hormonal reasons. This is true particularly in Indonesia and India, where the ratio of boys to girls affected is 3:2. In some areas, pregnant or lactating women succumb to night blindness.

According to the World Health Organization (WHO), xerophthalmia afflicts nearly 13 million infants and pre-school children. At least 500,000 of them become partially or totally blind each year, and approximately two-thirds die within a few months of becoming blind.

For those in an advanced state of illness, WHO recommends the capsule treatment already mentioned. WHO also recommends the treatment for children with measles, severe protein-energy malnutrition, acute or prolonged diarrhoea or acute lower respiratory infection, as well as a preventive dose every three to six months for all children between the ages of six months and six years.

Explaining vitamin A

When not used in a strictly biochemical context, the term vitamin A covers all the compounds — including dihydroretinol, retinal and the alpha, beta and gamma carotenoids — with the biological activity of retinol (vitamin A). Amounts of vitamin A are usually expressed as equivalents in micrograms of retinol, as is the amount of beta carotene (provitamin A).

such animal products as liver, kidney, eggs and dairy products, and fish. Unfortunately, these foods are too expensive for the people who need them most — the poor in developing countries, who are the primary victims of vitamin A deficiency. Their main source of vitamin A is the beta-carotene found in vegetables and fruit, and, for infants, their mothers' breast milk.

Dark green leafy vegetables, including spinach, amaranth, cassava and baobab leaves, and red sorrel, are particularly rich sources. So is the red palm oil consumed in part of Africa. Yellow or red vegetables and fruits, such as carrots, pumpkins, sweet potatoes, mangoes and papayas — but not citrus fruit — are also good sources (see table).

The Pharaohs' cure

Xerophthalmia was already known in the time of the

afflicted soldiers in the Confederate Army during the American Civil War, but was completely established only in the 1920s. Vitamin A was isolated and its structure determined in 1930s. It was crystallized in 1942 and synthesized for the first time in 1947.

There were still some clinical symptoms of night blindness and xerophthalmia in severely malnourished European children at the beginning of this century, but the conditions have gradually disappeared from Europe with socio-economic development, the fortification of foods and the improvement of health care.

However, a 1964 WHO survey showed that xerophthalmia was still widespread in Asia and other parts of the developing world and that vitamin A deficiency was a significant public health problem in many countries of Africa, Southeast

consumption'. According to FAO, people will increase their dietary intake of vitamin A only if they understand the link between the vitamin and nutritional blindness. They need information about which plant and animal foods are rich in vitamin A, how to grow or obtain them, and how to store and prepare them without losing the vitamin content in the process.

Enough of the right food

"We are focusing on the food angle," says Dr Franz Simmerbach, coordinator of the Vitamin A Programme in the FAO's Food Policy and Nutrition Division, "because we believe that people would not have vitamin A deficiency, or any other deficiency, if they ate properly in the first place. The carotenerich foods that we promote also contain other necessary micronutrients often needed by the same people who need vitamin A. We have to make sure that people have access to enough food and to the right food."

Vitamin A capsules should be taken when there are clinical signs of eye trouble, or where there is an emergency like a measles epidemic. Automatically giving a capsule to every child every six months can also help.

But dispensing vitamin capsules is only as effective as a country's health care network.

Usually the capsules reach only a small percentage of children, and rarely often enough. Fortifying some food with vitamin A — sugar in Central America, for example — can help too but only if everyone has access to the fortified food. None of these measures build up a capacity for long-term self-reliant prevention of vitamin A deficiency.

Only a better diet can do that. To prevent vitamin A deficiency in children, nutrition education has to start at the very beginning of the child's life. That means promoting the unique benefits of mothers' breast milk. The retinol in breast milk has been calculated at about 50 micrograms per 100 millilitres, an important source of vitamin A if the mother is healthy. In many traditional societies, breast-feeding continues well after the baby reaches the age of one year, and even at this stage vitamin A from breast milk can provide a third of daily requirements.

The next area for education is child feeding. Mothers need to learn about correct weaning practices, more frequent feeding with food prepared so that it is neither too bulky nor too coarse for a small child, eating dark green vegetables and fruits, the importance of adding enough fats to food for the absorption of carotenes, and the right ways to process and store food.

Research shows that the wrong processing and bad storage can drastically reduce the carotene content of some fruits and vegetables. And in some societies, pregnant and lactating women refuse for a variety of reasons to eat carotene-rich foods or to feed them to their children when they are sick.

— The FAO Review

List of Vitamin A-Rich Foods

EXCELLENT SOURCES

- gabi leaves
- ampalaya leaves
- saluyot leaves
- kamote leaves
- alugbati
- carrot
- malunggay leaves
- ispinaka

GOOD SOURCES

- Kalabasa
- mustasa
- patsay
- mango (ripe)
- saging
- yellow corn
- marine oil (sazeyte)
- kangkong
- letsugas
- ciams
- melon
- papaya (ripe)
- margarine
- palag
- staw talbos
- sayote tops
- talangka
- other shellfish
- eggcyok
- yellow kamote
- patola talbos

FAIR SOURCES

- eggcyok
- yellow kamote
- patola talbos

Source: Nutrition, Department of Health, Manila

Capsules help in an emergency, but the best way to fight blindness caused by xerophthalmia is by eating common foods that are rich in vitamin A.

The established average daily requirements are 400 micrograms a day for a young child and 600 micrograms for an adult. The international unit of vitamin A, still used in most dietary and daily food requirements tables, is equal to 0.3 micrograms of retinol.

The vitamin A contained in food is present in the form of retinol or as a precursor carotenoid, the most active being beta-carotene, which is metabolized to form retinol.

Sixty per cent of the vitamin absorbed is stored in the liver while the remaining 40 per cent is rapidly metabolized and excreted. In a well-nourished person, the hepatic (liver) reserve represents more than 90 per cent of the vitamin A present in the body.

The richest supply of pre-formed vitamin A is found in

Pharaohs. The Ebers papyrus, which dates to 1600 BC and is the oldest known medical text in the Western world, prescribed eating liver to those afflicted by the disease. Celsus, who lived from 25 BC to 50 AD, seems to have been the first to use the term xerophthalmia in his De medicina, the first medical book printed during the Renaissance (1478). Night blindness was common in Europe during the Middle Ages.

The French physician Jacques Guillemeau described it in 1585, and in 1863, Bitot, another French doctor, described conjunctival and corneal xerosis as well as the conjunctival spots that were then named after him.

The nutritional origin of the disease was probably first suspected by Hicks, who observed

Asia and the western Pacific.

In 1984, the Sub-Committee on Nutrition (SCN) of the UN Administrative Committee on Coordination (ACC) decided to organize a 10-year coordinated action programme by organizations within the UN system. Its goal was "to reduce the worldwide prevalence and severity of vitamin A deficiency, xerophthalmia and nutritional blindness to a point where they are no longer a public health problem."

The programme was launched at WHO headquarters in Geneva in 1985, with WHO as the lead agency and UNICEF, Unesco and FAO as collaborating organizations. FAO's contribution is "to increase the production of vitamin A and carotene-rich foods and ensure their increased

Fighting Maternal Deaths Worldwide

by Lois Jensen

A disturbing paradox of life in the developing world is the widespread death of women in the process of giving birth. For many women, child-bearing fulfils a socially revered role. It is a means of gaining status which is otherwise unattainable.

Yet for any number of reasons, including the perception that pregnancy and childbirth are a 'woman's lot', over half a million mothers die each year from pregnancy-related causes. And for every woman who dies, 100 others are left sick or disabled.

With proper nutrition and medical care, the risks associated with motherhood are relatively small. In Western Europe, for example, only about one in every 10,000 women dies from pregnancy-

ments, non-governmental organizations and international institutions that the time has come to move from advocacy to action.

At a March 1992 conference in Washington, DC, progress toward safe motherhood was assessed and strategies mapped out for the remainder of the decade.

The meeting was sponsored by the World Bank in cooperation with the United Nations Development Programme (UNDP), the UN Population Fund (UNFPA), UNICEF, the World Health Organization, the International Planned Parenthood Association (IPPP) and the Population Council.

The most common obstetric causes of maternal death in developing countries are the same as those found in the industrial nations 50 years ago.

an enormous burden on that country's obstetric wards.

In some Muslim countries, women, even in labour, are forbidden to leave their village to seek medical care without the permission of their husband or male relative.

Even in India, where family planning has long been advocated and abortion is legal, these services will not be sought out unless women themselves feel compelled to do so. "While we may provide the best services on earth, if women do not use them, they will have little or no impact on maternal mortality or women's health," says Meera Chatterjee, a health scientist from New Delhi.

Of particular concern to many is the rising incidence of maternal deaths among teenage girls, who are fre-



related causes. In Latin America, the odds rise to one in 73; in Asia, one in 54; and in Africa, to an appalling one in 21. Yet no statistics can adequately convey the horror of a single death, or the pain and difficulties such a monumental event can wreak upon a family.

In developing countries particularly, the death of a woman at the peak of her productive and reproductive life can have far-reaching consequences.

In her country, explains Anne Makinda, minister of community development in Tanzania, a woman would typically have a number of children dependent upon her. In the event of the mother's death, she says, the family would be expected to assume the cost of the burial as well as expenses related to transport, medical care and supplies. Survivors would have to purchase food for the mother used to grow herself, or find someone else to take up agricultural tasks. If the family stays together — which is often not the case — a daughter usually quits school to assume the household chores.

They include hemorrhage, infection, obstructed labour, pregnancy-related high blood pressure and unsafe abortion, which alone is responsible for more than 200,000 of the 500,000 maternal deaths that occur world-wide each year. Experts say that more and better family planning could prevent up to half the current number of fatalities. A combination of trained midwives, centres equipped to deal with complications and transport to those centres, could avert most of the other deaths.

Equally important, says George Zeidenstein, president of the Population Council, is the availability of safe abortion services as a back-up when contraception fails. In a closing statement in Washington, Mr. Zeidenstein said that while the issue is "endlessly controversial... no woman should be forced to accept the serious risk of death or debilitation if she chooses to terminate an unwanted pregnancy."

In a number of countries around the world, maternal death is being fought in a way that proves that the effort is neither impossible nor unaf-

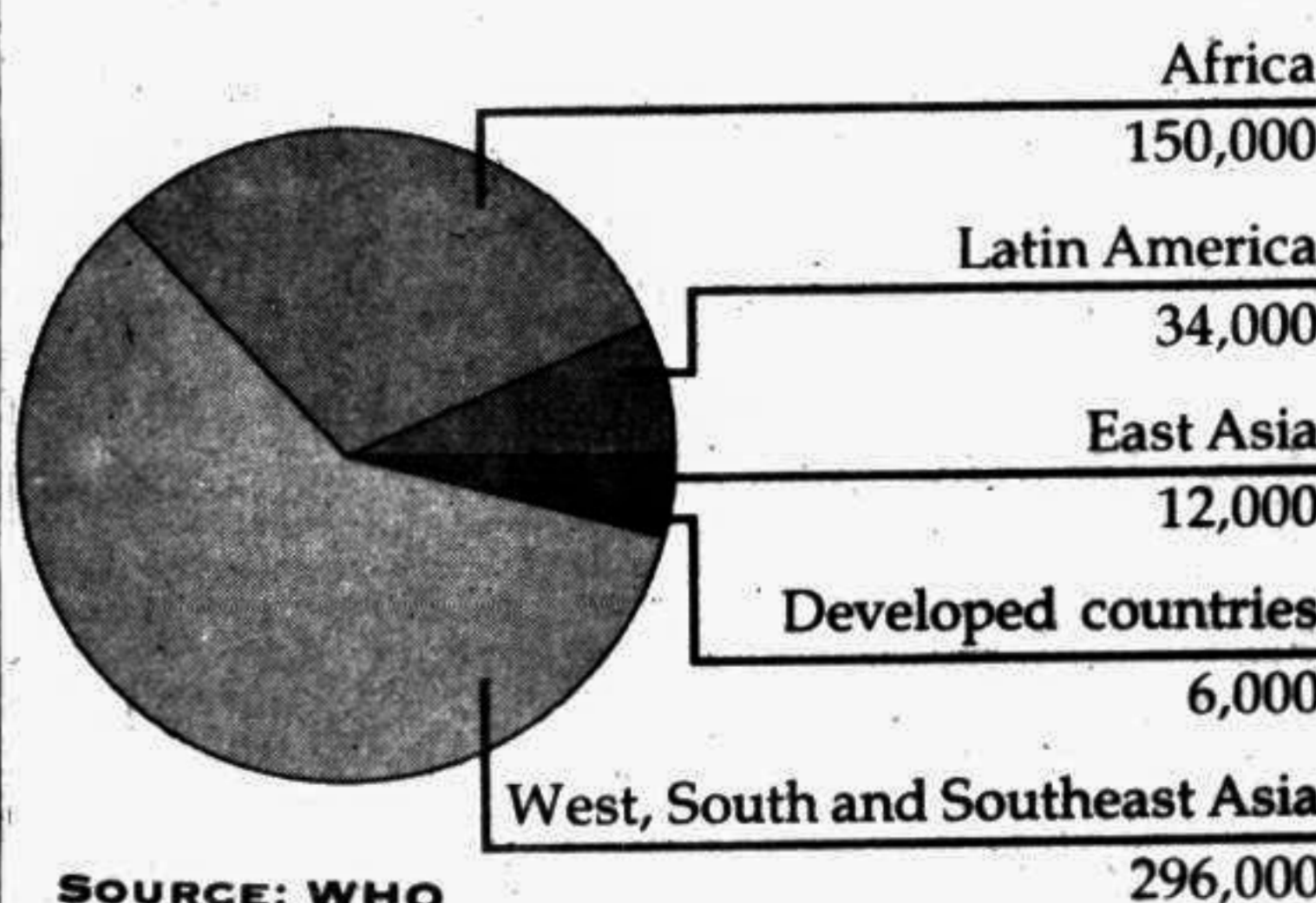
quently pressured by society into early marriage but who are at high risk in pregnancy because they are not fully developed physically.

Often the complications of obstructed labour or infection leave these young girls infertile, crippled or social outcast for the rest of their lives. Routinely denied access to government supported family planning programmes — as are unmarried women — adolescents are most likely to resort to abortion, whether or not it is legal, and whether or not it is safe.

Many believe that today's adolescents must be the prime target of safe motherhood efforts. The first step is education, says Nafia Sadik, executive director of UNFPA, which can "remove the fear that many women feel of the wider world represented by nurses and doctors, clinics and contraceptives."

Educated women are less at risk. They are more likely to delay the age of marriage, have fewer children and seek health care before and after pregnancy. In countries such as Mexico, the Republic of Korea and Tunisia, maternal mortality rates have dropped dramatically as rates of literacy and contraceptive use have risen.

MATERNAL DEATHS PER YEAR



Younger children suddenly lose the person they were closest to emotionally, and who provided them with informal education and social guidance. For newborns, loss of the mother almost certainly means death.

The survival and health of infants and young children has been a focus of international concern for decades. But only in the last five years has similar attention been given to women in their maternal role. In 1987 a global 'safe motherhood initiative' was launched in Nairobi with a pledge to reduce maternal mortality by one-half by the year 2000.

In the past five years, research and advocacy have been undertaken to determine and communicate the dimensions of the problem. Pilot projects have been initiated in more than 100 countries. But with the number of maternal death still essentially unchanged, there is broad-based agreement among govern-

The synergism between maternal health and other areas of human development, including education, family planning and primary health care, was a topic frequently referred to at the Washington meeting. "We can attack maternal mortality only in the total context of human development," says Mahbub-ul-Haq, former finance minister of Pakistan and chief author of UNDP's Human Development Report. Haldan Mahler, secretary-general of the IPPF, says that enlarging women's choices in "absolutely indispensable" to promotion of social and economic development. "Once women have been informed and supported in understanding their reproductive health, and given access to high quality contraceptive services, then you have made a real contribution to enlarging the space of women's freedom," he says. "And nothing in my opinion, is more important."

The World Bank and other partners in the safe motherhood drive are currently identifying and costing out models that countries can adapt.

These are based on a three-point approach that includes stronger community-based health care, reliable referral facilities to deal with obstetric emergencies, and an alarm and transport system to get women at risk to medical facilities quickly.

To make such a system work, all members of a community — women as well as men — must support it.

China reforms Free Medical Care System

by Zhang Yongqing & Miao Hong

LIANG Yan had worked with the international news desk of Xinhua (New China) News Agency for barely three months when he became ill from necrotising pancreatitis, a disease fatal in over 90 per cent of cases.

The 25-year-old journalism graduate was hospitalised for five months. All medical expenses — including the US \$130 per dose injection he took each day — were paid for by Xinhua. The news agency continued to pay his monthly wages even through a 30-month sick leave after hospitalisation.

For 40 years, China's free medical care system has been praised as one of the country's most important socialist advantages. It covers all urban workers in state enterprises and institutions (including Xinhua) as well as college students and disabled veterans.

Those who benefit from the system have a deep-rooted belief that they have an exclusive privilege to enjoy such 'welfare' without paying for medicines or hospitalisation. The state is supposed to shoulder all costs.

Now people have come to see the system as costly and strains are beginning to show. Only four million urban resident were entitled to free health care in 1952, when the system was first adopted. Now the scheme extends to nearly 200 million people.

(US \$495 million), in 1978 to 18 billion yuan (US \$3.3 billion) in 1989," says Liu Xiufeng, head of the Free-Medical-Care Reform Office under the Ministry of Public Health.

Statistics also show that in the latter half of the 1980s, the annual growth rate of free medicare expenditure surpassed that of the state's national income.

Last year, medical expenditure throughout China amounted to 60 billion yuan (US \$11 billion), accounting for 3.9 per cent of the coun-

try's gross national product. But its 200 million urban citizens who are now enjoying free health care swallowed more than one-third of the total.

As early as 1988, observers noted that the soaring cost of free medical care would become a heavy financial burden for the state. They suggested that measures be taken as quickly as possible to curb the runaway cost. That year, Mr Liu's office was established.

"It is not an easy job to perfect the original system," says Mr Liu. He says initial reform is now being tested in some pilot cities in an effort to sharpen people's awareness of the need to share the state burden — and pay sufficient money to support the system.

Authorities attribute the rising cost of free medical care mainly to the fast growing number of beneficiaries, increasing medicine price and malpractices in most hospitals and clinics. Other factors include an ageing population, the increasing cases of chronic diseases, and the importation of expensive, state-of-the-art equipment for diagnosis and treatment.

Loopholes also allow patients and doctors to exploit the system to their advantage. Some who enjoy free health

care service often get free medicines not only for themselves, but for other members of the family who are not entitled.

Some patients even ask doctors to prescribe more medicine than they need, and sell the surplus to pedlars to make money. What is ironic is that some patients would rather enjoy a leisure life by staying longer in hospitals even after recovery — anyway, their daily wages are guaranteed.

On the other hand, many doctors prescribe medicines randomly, or persuade patients to undergo costly examinations or treatment, regardless of whether it is necessary. Patients then submit the bill to their companies for reim-

bursement.

The state used to provide hospitals with adequate subsidies to cover the wages of medical workers and to modernize medical facilities. But in the past decade, it has gradually cut these subsidies as overall economic reform expanded.

Today, government subsidies only cover 14 per cent of the total expenditures of hospitals. About 60 to 70 per cent of hospital income comes from the sale of medicines. But outpatient services, surgical oper-

ations and other specialised charges remain very low. So much so that irregularities in hospitals seem not surprising.

The disadvantages of the free medical care system are obvious: the excessive use of expensive medicines and the indiscriminate waste of medical services and money. Some experts estimate that about 40 per cent of medicines are wasted or improperly used.

In 1989, four medium-sized cities — Siping in Jilin Province, Dandong in Liaoning Province, Huangshi in Hubei Province and Zhuzhou in Hunan Province — were selected as pilot cities in the effort to reform the health care system. Meanwhile, Shenzhen Special Economic Zone and Hainan Province took much bold-

steps in order to gather experience for deepening nationwide reform.

Before them, Beijing, Shanghai and Tianjin had already begun to reform the medical reimbursement system. Since 1982, for example, Beijing wage workers (either in state government institutions or enterprises) have been successively involved in sharing free health care costs with their employers.

Under an agreement reached in 1989 between the Beijing Public Health Bureau and the Beijing Financial Bureau, individuals are required to contribute to medical care services. About 90 per cent of colleges and universities in Beijing have also adopted this line, leading to a sharp decrease in medical expenditure.

Last January, it was suggested that individuals be required to cover 10 to 15 per cent of their medical expenses. But the yearly contribution ceiling for each individual would not exceed 120 yuan (US \$22), and medical expenses going beyond that would be paid by employers.

"The living standards of urban people will not be adversely affected since the reform only amounts to a small amount of money from individuals," says Liu Xiufeng.

Informed sources say the proposals will be introduced across China in the next three or five years. A special pool of money, raised from workers' salaries, will be established for medical care by 1995.

—Depthnews Asia