

ORS: The medical advance of the century



child falls ill with diarrhoea. Families can also use the rice water from the cooking pot to prevent dehydration. ORS, however, is best to treat dehydration when it occurs, as well as to prevent it.

ORS sachets are now being produced, with UNICEF support, in 60 developing countries. Total production is around 500 million sachets a year—costing around 10 cents (US) each.

Around half of all diarrhoea cases in the world's poorest countries are now treated with oral rehydration therapy (ORT), which means that ORS as well as recommended home fluids are given. This is a vast improvement over the 1 per cent level of usage at the beginning of the 1980s. But there is still an urgent need to make ORT more accessible.

One of the problems is that the medical establishment is still reluctant to accept ORS. In the United States, for example, it costs almost 10 times as much to treat dehydration with an intravenous drip in a hospital as it does to administer ORS, yet the intravenous method prevails. Drug companies, too, stand to gain more by selling antidiarrhoeal drugs, most of which are useless and some of which are dangerous.

Around 8,000 children still die each day from diarrhoeal dehydration, a toll the world can and must reduce with ORT.

During the 1980s, UNICEF launched the 'child survival and development revolution', concentrating its efforts on four potent methods of saving children's lives—growth monitoring, breastfeeding, immunization, and the use of oral rehydration salts (ORS)—the best way of combating the dehydration caused by diarrhoea.

The British medical journal *The Lancet* has described ORS as "potentially the most important medical advance of this century."

In the late 1970s, acute diarrhoea was killing around 5 million children each year. The obvious response to dehydration—giving the child water to drink—did not work because the liquid rushed through the digestive tract too quickly to be absorbed by the body tissues. The only answer seemed to be to bypass the digestive system altogether and rehydrate the body using an intravenous drip. This is an invasive and traumatic procedure for a child. And, because it must be administered by someone with medical training, it is

completely impractical for most episodes of childhood diarrhoea, which take place out of range of any kind of medical attention.

In 1968, researchers in Bangladesh and India discovered that adding glucose to water and salt in the right proportions enabled the liquid to be absorbed through the intestinal wall. So anyone suffering from diarrhoea could replace the lost fluids and salts simply by drinking this solution.

One of the first large-scale field applications of oral rehydration salts took place in 1971 during the Bangladesh war of independence when outbreaks of cholera swept through refugee camps. Of the 3,700 victims treated with ORS, over 96 per cent survived.

Home-made versions of ORS are not difficult to make and can help prevent diarrhoeal dehydration. The Bangladesh Rural Advancement Committee (BRAC), for example, has shown mothers in Bangladesh how to mix water, salt and molasses to prevent dehydration when a

Photo: A Cambodian mother feeds oral rehydration salts to her dehydrated child.

Population

1. The global population was 2.8 billion in 1955 and is 5.8 billion now. It will increase by nearly 80 million people a year to reach about 8 billion by the year 2025.
2. In 1955, 68% of the global population lived in rural areas and 32% in urban areas. In 1995 the ratio was 55% rural and 45% urban; by 2025 it will be 41% rural and 59% urban.
3. Every day in 1997, about 365 000 babies were born, and about 140 000 people died, giving a natural increase of about 220 000 people a day.
4. Today's population is made up of 613 million children under 5; 1.7 billion children and adolescents aged 5-19; 3.1 billion adults aged 20-64; and 390 million over 65.
5. The proportion of older people requiring support from adults of working age will increase from 10.5% in 1955 and 12.3% in 1995 to 17.2% in 2025.
6. In 1955, there were 12 people aged over 65 for every 100 aged under 20. By 1995, the old/young ratio was 16/100; by 2025 it will be 31/100.
7. The proportion of young people under 20 years will fall from 40% now to 32% of the total population by 2025, despite reaching 2.6 billion - an actual increase of 252 million.
8. The number of people aged over 65 will rise from 390 million now to 800 million by 2025 - reaching 10% of the total population.
9. By 2025, increases of up to 300% of the older population are expected in many developing countries, especially in Latin America and Asia.
10. Globally, the population of children under 5 will grow by just 0.25% annually between 1995-2025, while the population over 65 years will grow by 2.6%.
11. The average number of babies per woman of child-bearing age was 5.0 in 1955, falling to 2.9 in 1995 and reaching 2.3 in 2025. While only 3 countries were below the population replacement level of 2.1 babies in 1955, there will be 102 such countries by 2025.

Life expectancy

1. Average life expectancy at birth in 1955 was just 48 years; in 1995 it was 65 years; in 2025 it will reach 73 years.
2. By the year 2025, it is expected that no country will have a life expectancy of less than 50 years.
3. More than 50 million people live today in countries with a life expectancy of less than 45 years.
4. Over 5 billion people in 120 countries today have life expectancy of more than 60 years.
5. About 300 million people live in 16 countries where life expectancy actually decreased between 1975-1995.
6. Many thousands of people born this year will live through the 21st century and see the advent of the 22nd century. For example, while there were only 200 centenarians in France in 1950, by the year 2050, the number is projected to reach 150 000 - a 750-fold increase in 100 years.

Age structure of deaths

1. In 1955, 40% of all deaths were among children under 5 years, 10% were in 5-19 year-olds, 28% were among adults aged 20-64, and 21% were among the over-65s.
2. In 1995, only 21% of all deaths were among the under-5s, 7% among those 5-19, 29% among those 20-64, and 43% among the over-65s.
3. By 2025, 8% of all deaths will be in the under-5s, 3% among 5-19 year-olds, 27% among 20-64 year-olds and 63% among the over-65s.

Leading causes of global deaths

1. In 1997, of a global total of 52.2 million deaths, 17.3 million were due to infectious and parasitic diseases; 15.3 million were due to circulatory diseases; 6.2 million were due to cancer; 2.9 million were due to respiratory diseases, mainly chronic obstructive pulmonary disease; and 3.6 million were due to perinatal conditions.
2. Leading causes of death from infectious diseases were acute lower respiratory infections (3.7 million), tuberculosis (2.9 million), diarrhoea (2.5 million), HIV/AIDS (2.3 million) and malaria (1.5-2.7 million).
3. Most deaths from circulatory diseases were coronary heart disease (7.2 million), cerebrovascular disease (4.6 million), other heart diseases (3 million).
4. Leading causes of death from cancers were those of the lung (1.1 million), stomach (765 000), colon and rectum (525 000) liver, (505 000), and breast (385 000).

Health of infants and small children

1. Spectacular progress in reducing under 5 mortality achieved in the last few decades is projected to continue. There were about 10 million such deaths in 1997 compared to 21 million in 1955.
2. The infant mortality rate per 1000 live births was 148 in 1955; 59 in 1995; and is projected to be 29 in 2025. The under-5 mortality rates per 1000 live births for the same years are 210, 78 and 37 respectively.
3. By 2025 there will still be 5 million deaths among children under five - 97% of them in the developing world, and most of them due to infectious diseases such as pneumonia and diarrhoea, combined with malnutrition.
4. There are still 24 million low-birthweight babies born every year. They are more likely to die early, and those who survive may suffer illness, stunted growth or even problems into adult life.
5. In 1995, 27% (168 million) of all children under 5 were underweight. Mortality rates are 5 times higher among severely underweight children than those of normal weight.
6. About 50% of deaths among children under 5 are associated with malnutrition.
7. At least two million a year of the under-five deaths could be prevented by existing vaccines. Most of the rest are preventable by other means.

Health of older children and adolescents

1. One of the biggest 21st century hazards to children will be the continuing spread of HIV/AIDS. In 1997, 590 000 children age under 15 became infected with HIV. The disease could reverse some of the major gains in child health in the last 50 years.
2. The transition from childhood to adulthood will be marked for many in the coming years by such potentially deadly "rites of passage" as violence, delinquency, drugs, alcohol, motor accidents and sexual hazards such as HIV and other sexually transmitted diseases. Those growing up in poor urban areas are more likely to be most at risk.
3. The number of young women aged 15-19 will increase from 251 million in 1995 to 307 million in 2025.
4. In 1995, young women aged 15-19 gave birth to 17 million babies. Because of population increase, that number is expected to drop only to 16 million in 2025. Pregnancy and childbirth in adolescence pose higher risks for both mother and child.

Health of adults

1. Infectious diseases will still dominate in developing countries. As the economies of these countries grow, non-communicable diseases will become more prevalent. This will be due largely to the adoption of "western" lifestyles and their accompanying risk factors - smoking, high-fat diet, obesity and lack of exercise.
2. In developed countries, non-communicable diseases will remain dominant. Heart disease and stroke have declined as causes of death in recent decades, while death rates from some cancers have risen.
3. About 1.8 million adults died of AIDS in 1997 and the annual death toll is likely to continue to rise for some years.
4. Diabetes cases in adults will more than double globally from 143 million in 1997 to 300 million by 2025 largely because of dietary and other lifestyle factors.
5. Cancer will remain one of the leading causes of death worldwide. Only one-third of all cancers can be cured by earlier detection combined with effective treatment.
6. By 2025 the risk of cancer will continue to increase in developing countries, with stable if not declining rates in industrialized countries.
7. Cases and deaths of lung cancer and colorectal cancer will increase, largely due to smoking and unhealthy diet respectively. Lung cancer deaths among women will rise in virtually all industrialized countries, but stomach cancer will become less common generally, mainly because of improved food conservation, dietary changes and declining related infection.
8. Cervical cancer is expected to decrease further in industrialized countries due to screening. The incidence is almost four times greater in the developing world. The possible advent of a vaccine would greatly benefit both the developed and developing countries.
9. Liver cancer will decrease because of the results of current and future immunization against the hepatitis B virus in many countries.
10. In general, more than 15 million adults aged 20-64 are dying every year. Most of these deaths are premature and preventable.
11. Among the premature deaths are those of 585 000 young women who die each year in pregnancy or childbirth. Most of these deaths are preventable. Where women have many pregnancies the risk of related death over the course of a lifetime is compounded. While the risk in Europe is just one in 1 400, in Asia it is one in 65, and in Africa, one in 16.

Health of older people

1. Cancer and heart disease are more related to the 70-75 age group than any other; people over 75 become more prone to impairments of hearing, vision, mobility and mental function.
2. Over 80% of circulatory disease deaths occur in people over 65. Worldwide, circulatory disease is the leading cause of death and disability in people over 65 years.
3. Data from France and the United States show breast cancer on average deprives women of at least 10 years of life expectancy, while prostate cancer reduces male average life expectancy by only one year.
4. The risk of developing dementia rises steeply with age in people over 60 years. Women are more likely to suffer than men because of their greater longevity.

Progress of Nations 1996/ Women

1. In 1996 - 600,000 women die in pregnancy and childbirth. For each death 30 more incur injuries, infections and disabilities. 15- 16 million per year. Cumulatively 300 million or 1/4 of women now alive in the developing world.
2. Injuries and diseases like fistula, anemia, Sheehans's syndrome, and dyspareunia.
3. Need for high quality family planning. Presently family planing receives less than 2% of government health spending. Need for obstetric care that does no harm. Need to recognize complications and early pregnancy problem identification of the 15% that need modern care.
4. Low cost equipment and doctors on site for more than 6 hours.
5. Fathers need to be more involved and qualified and trained midwives are needed.
6. "The task of improving health in the developing world is largely a task of prevention and promotion--"
7. Five conditions account for 2/3 of child deaths (see pp. 22-25)
8. FGM (female genital mutilation) affects 2 million girls each year usually aged 4-12. It is not required by religion but is a tradition imposed to suppress sexuality and preserve virginity and enhance marriageability. It is a violation of the Convention on the Rights of the Child.
9. Many governments have policies prohibiting FGM but do not have laws against it or medical codes that prohibit its practice.

Progress of Nations 1996/ Health

1. Five conditions kill more than 8 million children each year. Measles, diarrhea, pneumonia, malaria, and malnutrition.
2. UNICEF and WHO led an effort and the immunized children went from 25 to 80 percent. Five million fewer children in the last generation have died as a result of prevention.
3. Complacency is borne by the false notion that immunization success is a one time effort and that reaching 50% with ORT is good enough.
4. A family at a health clinic should expect a health worker who can examine and diagnose, make a decision on appropriate treatment, give basic drugs for common problems, refer children to a hospital if necessary and give parents advice on how to manage the illness in the home.
5. To train or retrain a health worker would require 11 intensive days according to WHO and UNICEF guidelines.
6. Fourteen drugs and trained health care workers could respond to 80% of the children brought to clinics and health centers.
7. This training has an estimated world wide cost of 200 million dollars or .2% of what is being spent by developing world governments today.
8. Drugs including oral antibiotics for pneumonia, dysentery, and ear infections; an oral antimalarial drug; paracetamol for fever; ort salts for diarrheal dehydration; vitamin A for measles or Vitamin deficiency; mebendazole for intestinal parasites; tetracycline ointment for eye infections; and genitian violet for mouth sores and bacterial skin infections. An average cost for a full course of these treatments is 15 cents.
9. Training and treatment costs combined still equal less than 1/2 of one percent of health budgets already in place in developing countries.
10. Polio eradication will save the USA 270 million dollars. Immunization could control measles, smallpox, diphtheria, tetanus, yellow fever, whooping cough and polio. Good health is technically and financially feasible.

The Village Health Worker:

1. **Be Kind.** Treat others as your equal. Treat the sick as people.
2. **Share Your Knowledge.** Most common health problems could be handled earlier and better by people in their own homes.
3. **Respect Your People's Traditions and Ideas.** If you can use what is best in modern medicine, together with what is best in traditional healing, the combination may be better than either alone.
4. **Know Your Own Limits.** Do what you know how to do. Know your limits – but also use your head.
5. **Keep Learning.**
6. **Practice What You Teach.** Good leaders do not tell people what to do. They set the example.
7. **Work For the Joy of It.** Work first for the people – not the money.
8. **Look Ahead. And Help Others to Look Ahead.** Look for underlying causes. For example: Children who suffer and die from diarrhea are those who are poorly nourished.

Many things relate to health care:

Food Production

Land distribution

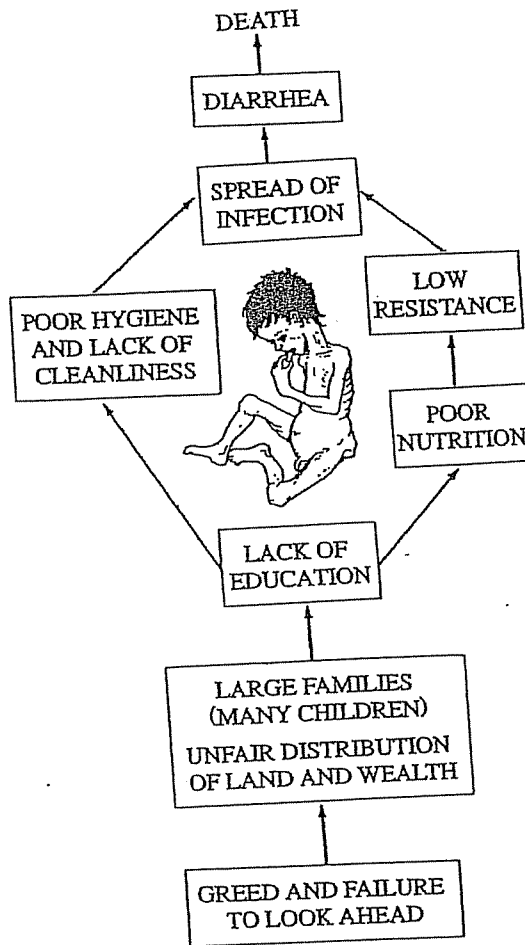
Education

The way people treat and mistreat each other.

Some other health-care ideas:

- Use local resources whenever possible
- The most valuable resource for the health of people is the people themselves.
- People cannot be healthy unless there is enough to eat.
- Trying a new idea? Always start small.
- Many people who farm do not have enough land to meet their health needs.
- Having many children is a form of social security.
- Early treatment is a form of preventive medicine.
- Work toward prevention – do not force it.
- Use treatment as a chance to teach prevention.
- For most sickness no medicine is needed.
- Remember medicine can kill.
- To educate people about sensible and limited use of medicines is one of the most important jobs of the health worker.
- Setting goals often helps people work harder and get more done.
- Only when the people themselves become actively responsible for their own and their community's health, can important changes take place. A good teacher is not someone who puts ideas into other people's heads; he or she is someone who helps others build their own ideas, to make new discoveries for themselves.
- The more ways you can share ideas, the more people will understand and remember.
- Caring and sharing are the keys to health.

From: "Where There is no Doctor", Werner et al, 1996



The chain of causes leading to death from diarrhea.