

Despite great advance in modern technology, keeping food safe remain a Public Health Problem in both developing and developed countries.

Contaminated food is responsible for a high proportion of diarrhoeal and other infectious diseases particularly in the developing world. W.H.O. estimates that in 1984 there were about 1000 million episodes of acute diarrhoea among children under 5 years of age in Africa, Asia and Latin America.

Food Contamination

Most food contamination: Microbiological in origine. However wide spread use of chemical substances throughout the food production chain, has increased the risk of chemical contamination in recent years.

They are commonly

—Agricultural, Pesticides and Fertilizers, Veterinary drugs, Growth stimulants and food additive.

Other Sources

Like lead, during processing etc.

From sellers

Ready food Contaminated due to poor hygiene, poor handling, displaying and preserving.

—Stale and rotten food serving from hotels and restaurants.

—From housewives from preparation to consumption etc.

Food Adulteration

Food adulteration is very common specially to the developing countries.

Most Common Factors are

- (a) Make the food attractive with harmful colours.
- (b) Increased quantity by adding:

Non food articles as well as harmful materials like: Sand, stone chips, saw dust, grass seeds, dry cowdung, Tanned dust, substandard food, other seeds to cooking oil etc.

Food Safety Hints

(I) Ensure that food is cooked or reheated long enough to kill all bacteria. Do not prepare food too far in advance.

(II) Avoid direct or indirect contact between raw and cooked foods on kitchen surfaces, on the chopping board or in the food store.

(III) Keep perishable food stuff below 10°C or above 60°C.

(IV) Wash hands before handling and cooking food and particularly after using the toilet.

(V) Keep kitchen surfaces and food utensils clean.

(VI) Make sure that any sore or cuts on your fingers and hands do not come in contact with food;

they might spread infection to others.

(VII) Avoid coloured food as harmful colours may be added.

(VIII) Soak vegetables and fruits in water to remove agricultural pesticides if any.

Education is the Remedy

Maintenance of safe environment and healthy habits can be achieved through education, specially female education. Both basic and health education are needed for health consciousness.

It is proved that with the increase of educational status, health status is also improved.

Literacy rate is highest in Kerala in India and birth rate, infant mortality rate, maternal mortality rate etc are lowest there.

According to 1981 census total literacy rate in Kerala was 69.17. Male-literacy was 74.03 and female literacy was 64.48.

The data of India shows that India is still far behind in total literacy than many other countries.

In 1981

The literacy rate was only 36.17% of the total where female literacy was only 24.88%.

In 1985, the rate was raised to 57% in case of male and 29 in case of female.

Education can increase knowledge, awareness, change attitude and thus can create a strong public opinion which can help to prevent health hazards due to poor environment.

Bibliography

1. World Health Organization, *World Health*, December 1986, "Water is Development".
2. World Health Organization, *World Health*, July 1987, 'Shelter for the Homeless'.
3. World Health Organization, *World Health*, March 1987, "Food Safety."
4. Swasth Hind, October, 1985, "Drinking water and Sanitation Decade" Page No. 257-259.
5. Park J.E., and K. Park, "Textbook of Preventive and Social Medicine, Jabalpur, Banarsi Das Bharat Publishers, 1985.

Control of Diseases and Immunization

Mrs. CHHAYA MAHATO

IN the industrialised countries of the World, some 1985 out of every 1,000 children born will live to enjoy their fifth birthday. In some parts of the third World not far short of 500 out of each 1000 will die before they are five years old. Of which many die from infectious disease and some other diseases caused by unhygienic practices at birth, many more from chronic malnutrition, chronic diarrhoea caused

The author is Nurse Tutor, Regional Teachers'/P.H. Nurses' Training Institute, Singur, Hooghly.

by insanitary conditions at home and contaminated drinking water, many may die from malaria, and parasitic diseases and others from heart, lung, stomach diseases.

In the third World the condition is not only for the children but also in adult individual. But the child are more susceptible. The Nurse and other types of worker who work in the Community either rural or urban they are equally susceptible of any communicable diseases. But these diseases are easily preventable by immunization, safe environment, hygienic life style. The nurse can do lot for herself, for other workers, for the community people specially for mother and children.

The united conference on primary health care at Alma Ata in 1978 adopted WHO/UNICEF concept of Primary Health Care. The content of Primary Health Care will include at least education in prevailing health problems and methods of preventing and controlling them, promotion of proper nutrition and adequate supply of safe water, basic sanitation, maternal and child care including family planning, Immunization prevention and control of locally endemic diseases, knowledge of home remedies, common herbs and their uses and so on: and its application in various countries depend on their socio-economic conditions.

The Aim of Primary Health Care

(1) To develop a permanent health service both curative and preventive.

(2) It also seeks to mobilise education, transport, agriculture, communication, industrial development to support healthy living by individual, families and communities.

Profile of Common Diseases

The main obstacles to fulfil the primary health care are some communicable diseases. These are Polio-myelitis, Rabies, Malaria, Filariasis, Dysentery, Infective hepatitis, Intestinal diseases, not only the communicable diseases but some other diseases give some obstacles like malnutrition, Trachoma, Leprosy, Mental diseases, heart diseases. Today we give more emphasis on six killer diseases: Measles, Diphtheria, Pertussis, Tetanus, Poliomyelitis, Tuberculosis. The man is surrounded by animal kingdom who cause diseases but if we protect ourselves they cannot bite.

Measles

Every 15 seconds a child dies from measles, two million children die each year. Virtually every unprotected child will contract the disease, which may be fatal for those already weakened by malnutrition and chronic diarrhoea. Complication occur in about 30% of cases and include ear infection, diarrhoea, blindness and encephalitis.

Diphtheria

Diphtheria kills between 10% and 15% of its victims. It causes membranes to develop in the

throat, and death may follow from asphyxiation. Diphtheria bacilli in the throat also produce a toxin which in the bloodstream, may attack the heart or nervous system with fatal result.

Pertussis

Some 51 million children contract pertussis (whooping cough) every year. Over 600,000 of them die from it. The disease got its common name of the "Whoop" children make while desperately trying to inhale after coughing spasms. Complications include, malnutrition (due to excessive vomiting after coughing), permanent brain damage and pneumonia.

Tetanus

Neonatal tetanus is estimated to cause 800,000 deaths a year. Nearly 100% of newborn babies who get it will die. (It is caused by unsterile cord or by applying germ laden substances to the stump). Immunization of the mother will give protection to the babies.

Poliomyelitis

Annually, about 275,000 children are affected by poliomyelitis. It is the major cause of lameness in the third world, where nearly all children get polio before they are three. Although only one out of every 200 infected children develops typical symptoms, among those with recognised polio, one in ten will die.

Tuberculosis

Tuberculosis attacks as many as ten million victims a year, and is particularly lethal for infants. In the lungs T.B. can trigger a rapidly fatal pneumonia or a slow wasting disease. In the bone, it can lead to severe deformities when T.B. occurs in the brain, the results are usually fatal.

(Rabies susceptible to working group)

Age wise distribution of Rabies

Age in year	Percentage
Below 1 year	2.4
1-14	46.5
15-44	30.4
45-64	16.1
65 and above	4.5

From this figure you can find that working age group are suffering from rabies more, owe community health worker and nurse. They are all the time susceptible to the bite of the rabid dog which lead to rabies. About 88 countries and territories mainly in the developing world are still suffering from spread of rabies among the dog population. Dogs are a most dangerous reservoir of the disease, accounting for over 91% of all human cases worldwide and over 95% of all human post-exposure treatment. Each year, for every one million inhabi-

tants in a given country at least 2,000 receive anti-rabies injections. Even so, a great many people die in pitiful circumstances for want of this treatment. The cost of medical services is enormous and many countries have not enough vaccine.

Typhoid

Some 300,000 cases are reported annually, the majority among school children. The number of unreported cases would be large.

Diarrhoeal Diseases

Most common cause death: about 10% of total infant deaths are due to diarrhoea. An estimated 1.5 million children under five years die of it.

Acute Respiratory Infections

Over 17% infant deaths are on this account, the proportion being next only to premature births upto 40% of outdoor patients and upto 35% of indoor patients are children below 5 years. The case fatality rate is 10-15%.

Malaria

The number of cases reported was 75 million in 1952, 6 million in 1976 and 1.6 million in 1983.

Filariasis

About 14 million persons have filariasis or large number are micro-filaria carriers, some 304 million live in endemic areas.

Trachoma

Assessed as responsible for 5% of all blindness and visual impairment cases of which mother are very common.

Rheumatic Heart Disease

Estimated prevalence rate is 6 per 1000 population, about two million children between 5 and 15 years of age suffer from rheumatic fever and rheumatic heart disease.

Coronary Artery Disease

The prevalence of cardiac cases is around 30 per 1,000 population of these 23% have coronary artery diseases.

Hypertension

In population aged over 40 years 10-30% have hypertension.

Diabetes Mellitus

An estimated 1.8% of the population suffer from the disease.

Mental disorders

Estimated at 10-20 per thousand population for major illness and a similar population of minor illness.

Hookworm Infestation

Prevalent in many parts of India. The south east and west coasts are mainly infested; of 359 million affected in Asia, 205 million are in India

Protein Energy Malnutrition

The main clinical forms of severe protein energy malnutrition, named marasmus and kwashiorkor, are seen in 1-2% of children of Pre-School age. Around 60-70% of the children suffer from mild or moderate degrees of PEM in times of food scarcity, the prevalence of severe malnutrition rises sharply. In urban slums the percentage of children suffering from severe malnutrition was found to be over 26%.

Nutritional Anaemia

Estimated prevalence is 60% among pregnant and 50% among children of pre-school age.

Vitamin-A Deficiency

Around 300,000 new cases of xerophthalmia, about half of which result in blindness occur each year in India. Percentage prevalence 1974-80 of Vit-A deficiency signs (Bitot's spots) in Pre-school children 1-5 years ranges from 0-1% in Kerala and 0-2% in Maharashtra, 2.6% in Andhra Pradesh, and 3.2% in Tamilnadu. The overall incidence of blindness is estimated at 1.4%; around 30,000 children go blind each year due to it.

Prevention and control

To prevent and control diseases the first and foremost action is disease surveillance. Surveillance is DATA COLLECTION FOR ACTION (specifically for expanded programme on Immunization) Surveillance in the collection of data about cases of the target diseases and the use of the data to improve action. Surveillance information help us first in planning our programme and later in evaluating it. The data will enable us to monitor the effectiveness of the control activities and to identify problems. We will concerned with problems which prevent children from receiving vaccine i.e. Coverage problem and problems which risk harming the vaccine i.e. vaccine problems.

To prevent the target diseases, disease surveillance must be conducted at every level of the immunization activities: at the health centre, at the district, and at the national level. In disease surveillance some steps are needed which are explained in the chart.

Data collection

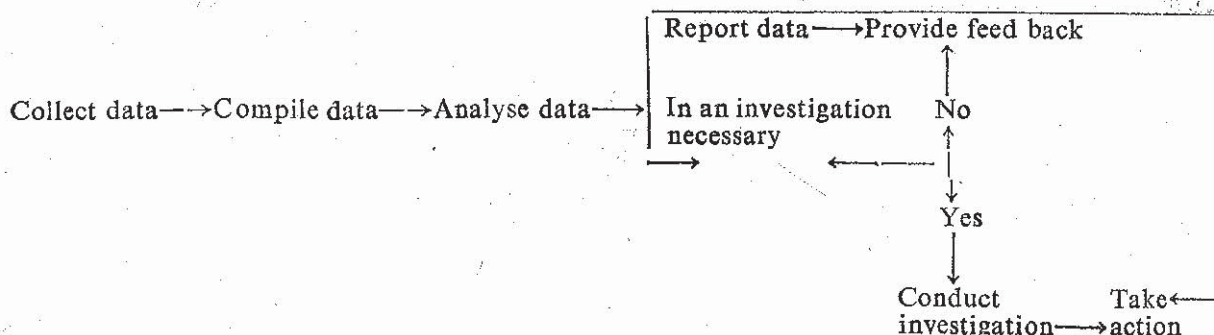
To decide at the local level whether changes in the programme are necessary.

To decide at higher levels whether changes in the programme are necessary.

Compile Data

In order to monitor the incidence of the diseases in any area, we should maintain charts and graphs which show the number of cases of the diseases for each reporting period.

Diseases Surveillance



Analyse Data

After compilation the data should be analysed; compare the number of cases with the numbers reported during previous reporting periods and with the same reporting period of previous year.

Reporting

After analysing the data, prepare a surveillance report and send it to the higher supervisor.

Provide Feedback

Feedback is essential to keep staff motivated to achieve high levels of immunization coverage and motivated to collect accurate and complete data on the occurrence of the disease.

Feedback Refers to

- (1) Informing staff of the effectiveness of the vaccination activities in meeting the disease reduction objectives in the area.
- (2) Commenting upon their performance in diagnosing and recording cases.
- (3) Answering questions and helping them solve problems they have in collecting data.
- (4) Congratulating and encouraging them.

Investigation

- (i) Number of cases more calls for investigation than you expect.
- (ii) Many cases occurring in full vaccinated children.
- (iii) Fewer cases than you expect.

Action Taken

To Solve the problem and better work action will be taken after investigation.

We give more stress in six killer diseases. So after surveillance next comes Immunization.

Immunization

In developing countries where vaccine and health worker brought together 800,000 infants saved every year by immunization. W.H.O. set up a challenging

goal in 1977 to provide immunization for all the children of the world by 1990. So they devoted World Health Day 1987 to "Immunization a chance for every child."

Most young children can be protected against six killer diseases by vaccination for this reason W.H.O. has launched an "Expanded Immunization Programme" and UNICEF'S "UNIVERSAL Childhood Immunization."

Expanded Immunization Programme

Functions

- (1) Lay down precisely the objectives of the immunization Programme and prepare a time table for its implementation.
- (2) Analyse the present situation.
- (3) Ensure implementation of an integrated programme with existing delivery systems.
- (4) Ensure training and supervision of staff in the field (Training of Unipurpose worker) in the multipurpose workers including EPI with financial assistance from W.H.O.. These additional staff will be placed at the disposal of present implementing agencies such as M.C.H. programme Tuberculosis Programme, etc for helping to achieve a better and bigger coverage than at present.
- (5) Ensure production, Procurement and distribution of quality vaccine. In this regard, look after at this directorate, the work relating to central research, Haffkine Institute Bombay etc. Provide technical and administrative guidance to the vaccine manufacturing Institute, so that production of quality vaccine is maintained.
- (6) Supply of materials and equipment like vaccine, cold storage facilities and other equipments to the state and develop cold chain for transport and storage of vaccine.
- (7) Establish liaison with the state Govt. to promote immunization to make pilot projects, local studies, limited surveys to identify problems of the programme, develop innovations, evaluate vaccine coverage and surveillance to target diseases.
- (8) Undertake periodic assessment of the ongoing programme, develop a system of recording and reporting of target disease and vaccination performances and use these data in monitoring and modifying the

programme.

(9) publish quarterly surveillance bulletin from the centre.

(10) Maintain technical liaison with W.H.O., UNICEF, UNDP etc. to frame proposals and utilize effect on the assistance provided for the programme.

(11) Provide technical and administrative services to the worker committee for the execution of the integrated immunization programme and the vaccine production Board constituted by the Dept. of Health and to any other task force as may be required from time to time.

National Immunization Schedule

Each country frames its own immunization schedule keeping in view the epidemiological pattern of the diseases, the types of vaccines available and the administrative and economic feasibility of providing the services. The following schedule is recommended in the country.

Beneficiaries	Age	Vaccine	No. of doses
Pregnant women	16-36 weeks	T.T.	2*
At birth		B.C.G.	1
Infants	6 week to 9 month	D.P.T., Polio	3
	9-12 months	Measles	1
	12-18 month		
	after 3rd dz.	D.P.T.	1 (Booster)
		Polio	1 (Booster)
Children	upto 5 years	D.T.	1**
		Typhoid	2
	10 years	T.T.	1***
		Typhoid	1*
	16 years	T.T.	1*
		Typhoid	1*

* Booster Give one dose, if vaccinated previously.

** Give two doses if not vaccinated previously.

Achievements of goal of fully immunized Individual in India

	goal in 2000	1980-1981	1984-1985
B.C.G.	85	73	65
D.P.T.	85	37	51
Polio	85	4	37
Measles	—	—	—
Tetanus Toxiod	100	24	33
During Pregnancy			

Cold Chain System

The most essential services which needed to increase the immunization coverage in "Cold Chain System" (For protecting the vaccine from external environment the cold chain system established) The cold chain system in the lifeline of E.P.I. ensuring that potent vaccine arrives at the right place, at the time and in sufficient quantity.

Cold chain system refers to a system for transporting and storage of vaccines at low temp. from manufacturer to the point of use. Some vaccines are stored at +4°C to 8°C while others at -20°C: usually these are stored in freezers, refrigerator and cold room. Vaccination teams use vacuum flasks and cold boxes to carry the vaccines to the field visits.

—Vaccine must be staked loosely on the shelves of a refrigerator or a cold room. So that air is able to move freely to keep all the boxes cold.

—Vaccine must be warms up at zero degree before putting in the ice pack.

—Do not use freezed DPT or TT Vaccine.

Then other communicable diseases can be controlled by

- Practising hygienic practices.
- Sanitary disposal of excreta and refuses.
- Using safe drinking water.
- Using healthy environment.

From practising these habit we can control diarrhoeal diseases. Typhoid, Malaria, Filaria, Trachoma, Hookworm infestation. My previous speaker already discussed how to establish safe environment.

Other than communicable diseases can be controlled

By Intaking balance diet, maintain regular exercise and changing the life style and maintaining body weight. Improving socio-economic condition we can control mental illness and malnutrition. So in this measure we can control various diseases. The worker who works in the community they must follow the control measure. So she is sure her health and health of the community. But in 20th century we have lot of ignorance about our health. We do not know how much nurse have suffered from these diseases because no study has been conducted, till date. So if we want to maintain community in health our first and foremost duty to maintain our health.

Bibliography

1. World Health Organization: Module of Expanded Immunization Programme. (Conduct Disease Surveillance) Training for Mix-Level Managers.
2. World Health Organization *World Health*: January-February, 1987. "Immunization a Chance for Every Child".
3. UNICEF: *Future* 13. p. 43-44.
4. UNICEF—The State of the World's Children, 1987. p. 94.
5. *Swasth Hind*—September, 1986.