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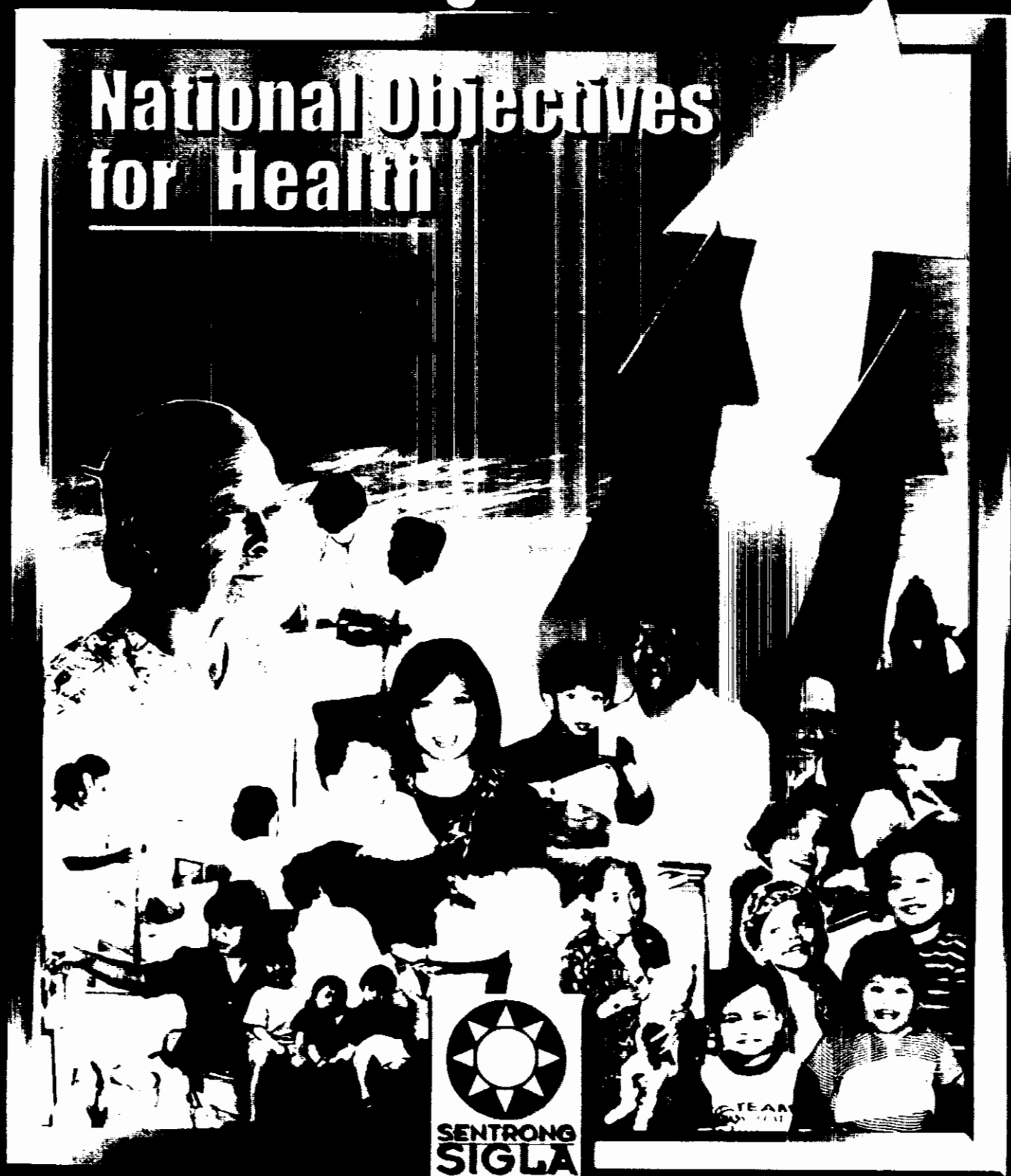
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF HEALTH

Kalusugan Para Sa Masa

National Objectives for Health



SENTRONG SIGLA
Health ang una!

Kalusugan Para Sa Masa

National Objectives for Health

Philippines
1999-2004

Department of Health
Manila

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FOREWORD

The past 20 years have witnessed important changes in the health profile of the country. Generally speaking, the health of Filipinos has improved in the past decades. Infant mortality rate, maternal mortality rate, life expectancy and other vital indices of health and development have shown improving trends.

However, we are not performing as expected, especially when compared with neighboring Southeast Asian countries. While the incidence of infectious disease is on the decline, its burden on the cost of health is still heavy. The resurgence of some infectious diseases which we thought we have already controlled, remains a threat we cannot ignore. On the other hand, degenerative diseases are on the rise, an epidemiologic shift that brings to us the double burden of disease. Health risks from environmental and work-related factors need to be addressed and mitigated as well.

The correlation of poor health and lower socioeconomic status has been well documented. Many of our countrymen have poor health simply because they have no means of paying the often exorbitant cost of health care today. For some, inaccessible health services exist because of geographical factors. Many Filipinos are still living in remote and hard to reach areas, making access to primary health care services an occasional privilege, not a basic right. These unnecessary and unfair gaps in the health care delivery system continue to deprive the poor of their right to health.

In retrospect, the present reality in the health sector is brought by several factors affecting the delivery of health services. One of these is the devolution of health services to the local government units (LGU's). Passing on the big responsibility of health care to LGU's was done with noble intentions, but unfortunately, with inadequate preparation resulting in inappropriate and ineffective health service implementation. A weak hospital system, insufficient mechanism for providing public health programs, and uneven distribution of health human resources still plague our health care system.

Inequitable health care financing still exists. A huge portion of the government's budget for health goes to tertiary hospital care. The National Health Insurance Program supports only 7 percent of the total health expenditure - to the detriment of the poor. In addition, technical and administrative fragmentation of public health services and the absence of cost sharing among LGU's impair the efficient utilization of resources for health care.

The crucial roles of the different stakeholders in the health sector underscored the need for the Department of Health (DOH) to set the direction and the goals we want to achieve in terms of our health. Defining the key roles of stakeholders is central to the successful delivery of health service, and in achieving the goals for improved health for all. The challenge we see lies in how the different stakeholders will forge this vital partnership for health, so that collectively and individually, every stakeholder may share in the responsibilities for health.

The National Objectives for Health is a statement of the national goals for health. This is the product of the combined efforts of different health workers and health professionals of varying field of expertise from both the government and private sectors. This document went through the process of peer reviews to ensure that our objectives are realistic and can be accomplished within the medium-term period. This document contains a national strategy for significantly improving the health of the nation over the coming decade. It sets our national goals and objectives for health through the prevention and control of diseases and the promotion and protection of health.

The National Objectives for Health states our objectives for the eradication and control of infectious diseases commonly affecting our people, major chronic illnesses and injuries that compromise lives of the productive sector of our society. It also encourages the promotion of healthy lifestyle and health-seeking behaviors that in the long run effectively prevent or control certain kinds of debilitating illnesses and life-threatening diseases.

It is hoped that with these goals and objectives, all health stakeholders will work as one to accomplish our common vision of health for all and of ensuring the accessibility and quality of health care to improve the quality of life of all Filipinos, especially the poor.

I recommend this document for your consideration, to use as appropriate in your field of work, and as a basis for health planning, program development and implementation. All those who participated in its development can take pride in its clarity of purpose and vision. All of us can feel humility in the face of its monumental challenges, but we also can share a new sense of resolve to move forward to achieve a nation of healthy people.

ALBERTO G. ROMUALDEZ, JR., MD
Secretary of Health

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The **National Objectives for Health(NOH)** was developed and prepared by the Department of Health (DOH) with the participation of several services, offices and agencies. The NOH Technical Working Group was directly in charge of the preparation of this document which was done by a pool of technical experts and writers from reports, data, researches and other materials contributed by various agencies and individual experts within and outside of the DOH. Tables, graphs and other data used in this document came from different sources which were properly cited and identified throughout this publication.

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List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AFP	Acute Flaccid Paralysis
ARI	Acute Respiratory Infections
AEFI	Adverse Events Following Immunization
ABTC	Animal Bite Treatment Center
ART	Atraumatic Restorative Treatment
ARMM	Autonomous Region for Muslim Mindanao
BHS	Barangay Health Stations
BSS	Behavioral Surveillance System
BP	Blood Pressure
BAI	Bureau of Animal Industry
BFAD	Bureau of Food and Drugs
BRL	Bureau of Research and Laboratories
BSWM	Bureau of Soils and Water Management
CVD	Cardiovascular Diseases
CVA	Cerebrovascular Accident
CSAC	Child in Situation of Armed Conflict
CGN	Chronic Glomerulonephritis
COPD	Chronic Obstructive Pulmonary Disease
CHED	Commission on Higher Education
CDCS	Communicable Disease Control Service
CIDSS	Comprehensive and Integrated Delivery of Social Services
CHD	Congenital Heart Disease
CAR	Cordillera Administrative Region
CAD	Coronary Artery Diseases
CBR	Crude Birth Rate
CDR	Crude Death Rate
DDB	Dangerous Drugs Board
DMFXT	Decayed, Missing, Filled and Indicated for Extraction Teeth
DA	Department of Agriculture
DECS	Department of Education, Culture and Sports
DENR	Department of Environment and Natural Resources
DOH	Department of Health
DILG	Department of the Interior and Local Governments
DOLE	Department of Labor and Employment
DND	Department of National Defense
DPWH	Department of Public Works and Highways
DOST	Department of Science and Technology
DSWD	Department of Social Welfare and Development
DOTC	Department of Transportation and Communication
DEC	Diethyl Carbamazine

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DRE	Digital Rectal Examination
DOTS	Directly Observed Treatment Short Course
DALY	Disability Adjusted Life Years
ECC	Employees Compensation Commission
ER	Employment Rate
ESRD	End-Stage Renal Disease
EHS	Environmental Health Service
EMB	Environmental Management Bureau
EO	Executive Order
FOBT	Fecal Occult Blood Test
FSW	Female Sex Workers
FETP	Field Epidemiology Training Program
FHSIS	Field Health Service Information System
FNRI	Food and Nutrition Research Institute
FIC	Fully Immunized Child
GO	Government Organization
GDP	Gross Domestic Product
GNP	Gross National Product
HAMIS	Health and Management Information System
HIS	Health Intelligence Service
HBV	Hepatitis-B Virus
HEP	Hospital Epidemiology Program
HOMS	Hospital Operations and Management Service
HIV	Human Immunodeficiency Virus
HSS	H.I.V. Serologic Surveillance
IP	Indigenous People
IMR	Infant Mortality Rate
ICHSP	Integrated Community Health Services Project
ISAAC	International Study of Asthma and Allergies in Childhood
IDD	Iodine Deficiency Disorder
IDA	Iron Deficiency Anemia
JICA	Japan International Cooperation Agency
KKC	Kilatis Kutis Campaign
KAP	Knowledge Attitudes and Practices Survey
LFP	Labor Force Participation
LTO	Land Transportation Office
LEC	Leprosy Elimination Campaign
LCR	Local Civil Registrars
LESU	Local Epidemiology Surveillance Unit
LGU	Local Government Unit
LCP	Lung Center of the Philippines
MCS	Malaria Control Service
MCHS	Maternal and Child Health Service
MMR	Maternal Mortality Rate
MMDA	Metro Manila Development Authority
MWSS	Metropolitan Waterworks and Sewerage System
MBN	Minimum Basic Needs
MDT	Multi-Drug Therapy
NAM	National Asthma Movement
NCR	National Capital Region
NCMH	National Center for Mental Health
NDHS	National Demographic and Health Survey
NEDA	National Economic and Development Authority
NESSS	National Epidemiologic Sentinel Surveillance System
NKTI	National Kidney and Transplant Institute
NMEDS	National Monitoring Evaluation Dental Survey
NNS	National Nutrition Survey
NOH	National Objectives for Health
NSCB	National Statistical Coordination Board
NSO	National Statistics Office
NTPS	National Tuberculosis Prevalence Survey
NHL	Noise-induced Hearing Loss
NCDCS	Non Communicable Disease Control Service
NGO	Non Government Organization
NS	Nutrition Service
ORT	Oral Rehydration Therapy
OFW	Overseas Filipino Worker
OWWA	Overseas Workers Welfare Administration
PM	Particulate Matters
PID	Pelvic Inflammatory Disease
PO	People's Organization
PPE	Personal Protection Equipment
PWD	Persons with Disabilities
PAGASA	Philippine Atmospheric, Geophysical and Astronomical Service Administration
PCS	Philippine College of Surgeon
PEHAS	Philippine Environmental Health Assessment Study
PHC	Philippine Heart Center
PHDP	Philippine Health Development Project
PHS	Philippine Health Statistics
PIA	Philippine Information Agency
PMHA	Philippine Mental Health Association
POC	Philippine Orthopedic Center
PSY	Philippine Statistical Yearbook
POPCOM	Population Commission
PR	Prevalence Rate
PHC	Primary Health Care
PSA	Prostate Serum Antigen
PEM	Protein-Energy Malnutrition
PHO	Provincial Health Office
RESU	Regional Epidemiology Surveillance Units
RHO	Regional Health Office

RTI	Reproductive Tract Infection
RITM	Research Institute for Tropical Medicine
SCS	Schistosomiasis Control Service
SHNC	School Health and Nutrition Center
STD	Sexually Transmitted Diseases
SHC	Social Hygiene Clinic
SWS	Social Weather Station
STH	Soil-Transmitted Helminths
SEAMIC	Southeast Asian Medical Information Center
SAPEL	Special Action Project for the Elimination of Leprosy
TFR	Total Fertility Rate
TSP	Total Suspended Particles
TBA	Traditional Birth Attendant
TB	Tuberculosis
TBCS	Tuberculosis Control Service
UN	United Nations
UNDP	United Nations Development Program
UNICEF	United Nations International Children Educational Fund
UP-NPCIS	University of the Philippines-National Poison Control and Information Service
UP-PGH	University of the Philippines-Philippine General Hospital
UHNP	Urban Health and Nutrition Project
VAW	Violence Against Women
VAD	Vitamin-A Deficiency
WHO	World Health Organization

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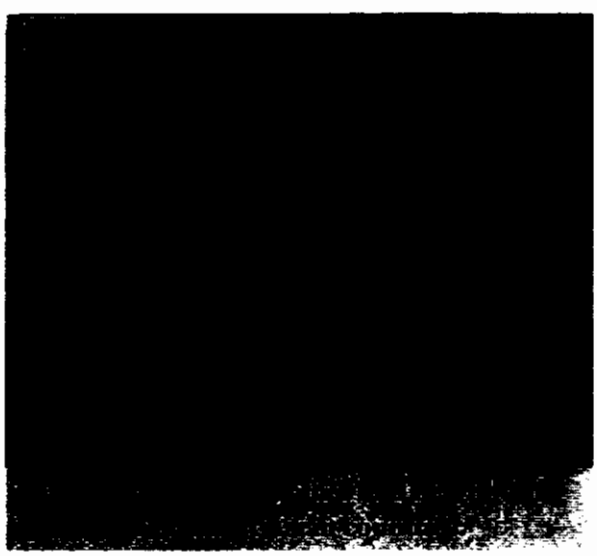
THE HEALTH OF THE FILIPINO PEOPLE

THE PHILIPPINES

Land and Climate

The Philippines is a tropical country of 7,100 islands lying in the Pacific Ocean off the coast of Southeast Asia. The islands have a total land area of 300,000 square kilometers. The two largest islands are Luzon in the north and Mindanao in the south. Between these islands lies a group of small to medium-sized islands called the Visayas. Manila is the capital city. Metropolitan Manila, which is made up of 12 cities and five municipalities, is the biggest urban center in the country.



The country is mountainous with narrow strips of lowland along the coast and some broad inland plains. Tropical forests used to cover most of the Philippines, but very large areas are now devoid of forest leading to soil erosion and flash floods. The country has an extensive coastline and many fine bays and harbors. A wide variety of tropical plants and animals can be found in its mountains, rivers and lakes and along its coastal areas. Except for a few plants, the medicinal values of these flora remain to be fully tapped.

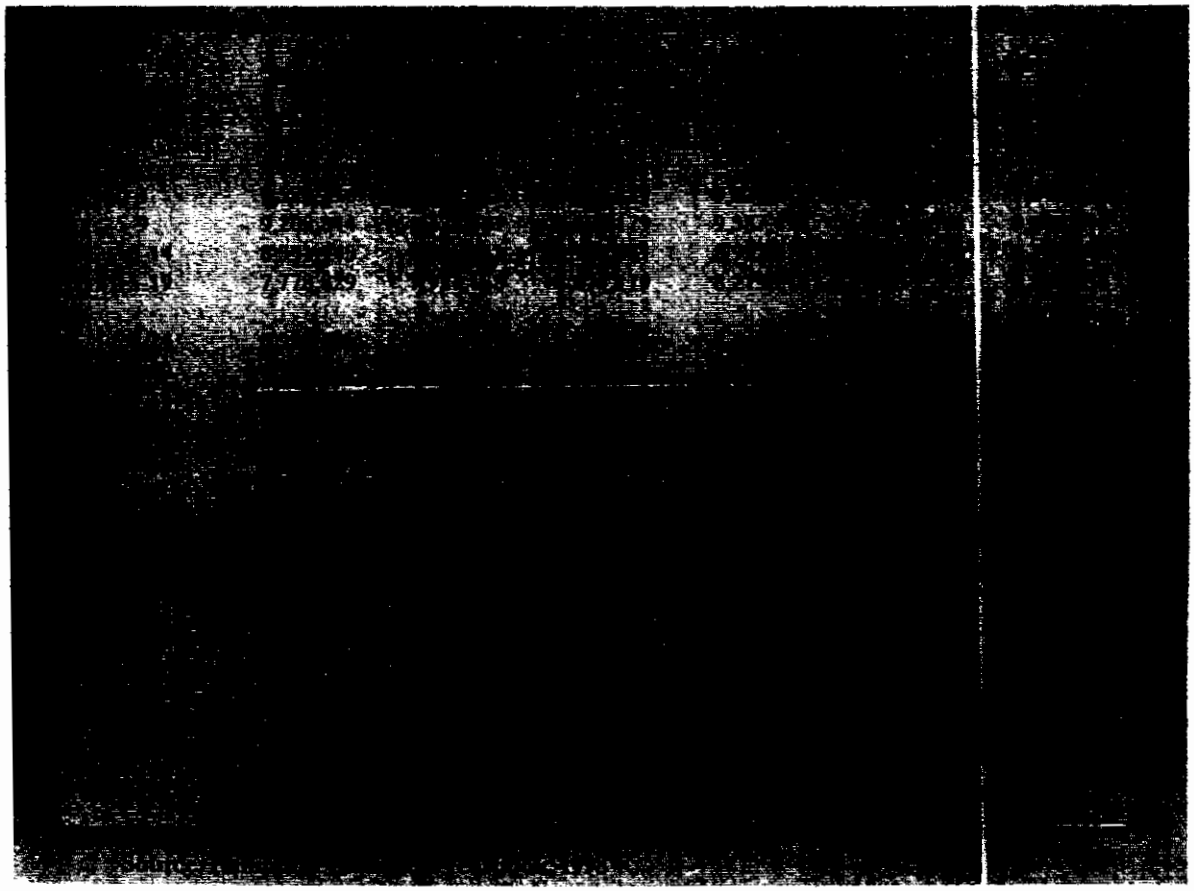
The climate is hot and humid with an average temperature of 32°C. The hottest months are from March to June when temperatures may reach 38°C. The weather from November to February is pleasantly cool and dry with temperatures around 23°C. Rains and typhoons prevail from July to October. The Philippines is prone to natural disasters brought about by volcanic eruptions, earthquakes, floods and typhoons. The tropical temperature favors the existence of disease vectors and parasites.

People

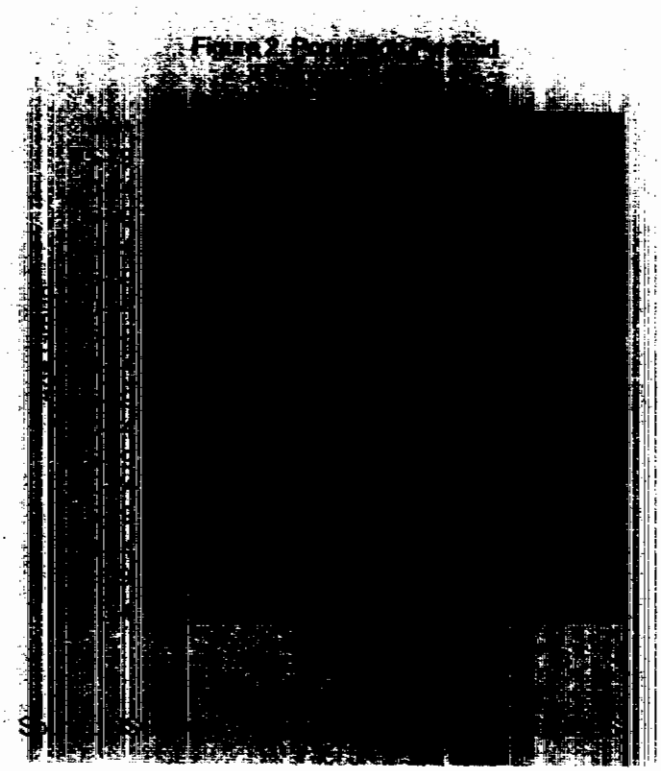
The earliest known settlers in the islands were the Negritos, who arrived about 50,000 years ago. Archeological findings show that humans inhabited the Philippines more than 400,000 years ago. Modern Filipinos are of Malay origin and descended from Indonesians and Malays who settled in the Philippines about 3000 BC. They intermixed with more recent immigrants that include the Chinese, Indians, Spaniards and Americans, among others. The complex mix of peoples has created a blend of eastern and western influences that is uniquely Filipino.

Based on the 1995 national census, the estimated population in 1999 is 74,723,373. This figure is projected to increase to 82,636,689 in 2004. This makes the Philippines one of the world's most populous countries. The population density is 249 people per square kilometer, but this is unevenly distributed throughout the islands. About 56 percent of the population live on the island of Luzon, with the greatest concentration in Metropolitan Manila where the population density is 16,051 people per square kilometer. The least populated area is the Cordillera Administrative Region (CAR) with a population density of 75 people per square kilometer.

The population is increasing at an annual rate of 2.32 percent but is projected to decrease to an annual growth rate of 1.9 percent in 2004. About 38 percent of the population are under 15 years old. This makes the Philippines a country of mostly young people. Those aged 65 years and over comprise 3.5 percent of the population and are expected to increase to 4.3 percent in 2004. The popu-



lation is almost equally divided between sexes with males comprising 50.4 percent of the total population. Women of reproductive age comprise around 23 percent of the population.



The Philippines is the only predominantly Christian country in Asia. The majority of Filipinos are Roman Catholics. There are at least 110 ethnolinguistic groups. The indigenous peoples account for about 18 percent (13 million) of the population. Most Filipinos are bilingual, speaking both English and Filipino or any of the other local languages. The presence of a well-established educational system accounts for the high functional literacy rate of 83.8 percent. The functional literacy rate among females is 85.9 percent. It is slightly lower at 81.7 percent among males. In urban areas, where the people have easier access to educational facilities, including mass media, the functional literacy rate is higher at 88.4 percent compared to only 79.1 percent in rural areas.

Although the functional literacy rate is high, folk beliefs, misconceptions and practices detrimental to health are still rampant. Sociocultural barriers to health are prevalent and more apparent in indigenous communities.

The family is the basic unit of Filipino society. It is usual to find extended families where the members include not just the husband, wife and their children but also grandparents, parents, siblings and other relatives. Families are close knit, strongly influenced by tradition and have a sense of loyalty to family and the community. Special events like births and deaths and religious affairs like fiestas bring families together. The family support system is very strong, especially in times of need.

Urbanization and Migration

The Philippines is still predominantly rural, with about 52.4 percent or 7,441,800 families living in rural areas. Urbanized areas are rapidly expanding and offer a wide range of economic, educational, recreational and other facilities. These attract migrants from rural communities. Settlements in remote frontier areas are also increasing.

Rural-to-urban and rural-to-rural migration put so much pressure on providing basic social services like health care, shelter, water, sanitation and education. The congestion and pollution in urban areas are harmful to health. In frontier areas, the people's health is affected by difficult access to health services and the presence of locally endemic diseases like malaria, filariasis and schistosomiasis.

Government

Under the Constitution, the Philippines is a democratic and republican state with three branches of government (executive, legislative and judicial). The executive power is vested in the President who is elected directly by the people. The President is also the head of state and commander-in-chief of the armed forces. The Cabinet members assist the President in executing laws, policies and programs of the government.

The lawmaking power is vested in a bicameral congress composed of the Senate and the House of Representatives. The Senate has 24 senators directly elected nationwide by the people. The House of Representatives has 250 members elected by congressional districts and by party list system. Judicial power is vested in the Supreme Court and a system of several lower courts. The Supreme Court is composed of the Chief Justice and 14 associate justices.

The local government units (LGUs) comprise the political subdivisions of the Philippines. These are made up of 78 provinces headed by governors, 82 cities and 1,525 municipalities headed by mayors and 41,939 *barangays* or villages headed by barangay chairmen. LGUs are guaranteed local autonomy under the Constitution. Legislative power in these LGUs is vested in their respective local councils. The country is also divided into 16 administrative regions. One is the Autonomous Region for Muslim Mindanao (ARMM) headed by a governor. In other regions, offices of national agencies are under the respective regional directors.

Economy

The Philippines is a developing country. In 1997, the per capita gross national product (GNP) was P34,365 while the per capita gross domestic product (GDP) was P32,961. The economy grew at a faster rate in the 1990s than in the 1980s. From 1988 to 1997, the country's GNP grew at an annual average of 4.1 percent while the GDP went up by an average of 3.4 percent during the same period. In 1997, the GDP was mainly from the service sector (43 percent), followed by the industry sector (36 percent), and the agriculture, fishery and forestry sector (21 percent).

The annual per capita poverty threshold in 1998 was P11,388, as compared with P4,777 in 1988. The poor comprise 37.5 percent of the population. This is 15.5 percent lower than in 1988.

The economy traditionally depends on agriculture, forestry, mining and fishing. One of the thrusts of the current administration is to strengthen agricultural production to attain food security. This will positively affect the health and nutrition of the Filipinos.

In recent years the manufacturing sector has grown rapidly. The food and beverage industry is one of the largest industries within this sector. Other major industries include production of garments, electronic equipment, wood products and furniture. The service industries, which include education, transportation, trade, property, health, housing and government services, account for a major portion of the economy. They employ the bulk of the workforce.

The economic growth is partly due to the deployment in other countries of Filipino workers. This sector, the overseas Filipino workers, has greatly helped the Philippine economy. Their health as well as that of their families needs to be addressed.

The leading imports include machinery, equipment, petroleum, chemicals and raw and semi-processed materials. The major trading partners of the Philippines are the United States, Japan, the European community and the ASEAN neighbors. The country still highly depends on imported health care products like drugs, vaccines, equipment and medical supplies.

GENERAL HEALTH STATUS OF THE FILIPINOS

Life Expectancy at Birth

The average life expectancy at birth rose from an average of 61.6 years in 1980 to 64.6 years in 1990. Further increase was noted during recent years to an average life expectancy of 68.6 years in 1999.

Life expectancy of females has always been higher than males in the Philippines (71.28 years for females in 1999 compared to 66.03 years for males for the same year). It is projected that by 2004, it will increase to 72.8 for females and 67.53 for males (*NSCB 1998*). Large variations in the average life expectancy occur among the different regions of the country. Central Luzon and Southern Tagalog have the highest life expectancy while ARMM and Eastern Visayas have the lowest.

The rising life expectancy implies that more people will reach old age. This means a higher proportion of elderly in the general population. With this trend comes the increase in the occurrence of degenerative diseases and disabilities associated with an aging population. The large differences in life expectancy among the different regions mean that there is a need to increase health and other socioeconomic inputs in some regions, particularly those still below the national average.

Crude Birth Rate

In 1946, after World War II, the crude birth rate (CBR) was noted at 28.9 per 1,000 population. It went up to 30.5 per 1,000 population the next year and remained stable during the 1950s. The trend decreased in the 1960s, reaching the lowest rate ever recorded in 1972 at 24.8 per 1,000 population. Rates from 1973 to 1979 showed an increasing trend, soaring from 26.1 per 1,000 population in 1973 to a high of 30.7 per 1,000 population in 1979. From the 1980s and through the 1990s a continuous decline of the CBR was noted. The CBR for 1997 is 28.4 per 1,000 population.

As in previous years, there is a higher proportion of males born in 1993 compared to females. The birth sex ratio is 109 baby boys born for every 100 baby girls born.

Crude Death Rate

The Philippines has significantly reduced mortality from 1946 to the present. A sharp decline of the crude death rate (CDR) was noted from the 15.1 per 1,000 population recorded in 1946 to the rate of 7.3 per 1,000 population recorded in 1959. From the 1960s until the 1990s, a slow but steady decline in the CDR was noted, from the rate of 7.8 per 1,000 population in 1960 to the rate of 6.1 per 1,000 population recorded in 1997.

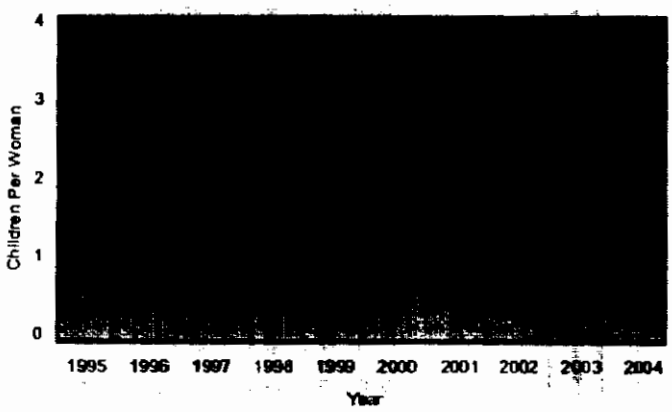
Death rates by age tend to be very high at infancy and early childhood, declining sharply by the age of 10. The rates remain low from this age, begin to climb at around age 40 years and accelerate beyond 50 years and above. In 1993, the mortality rate for males was 5.6 per 1,000 male population while that for females was 3.9 per 1,000 female population. There were more male than female deaths, accounting for a death sex ratio of 147 males per 100 females dying.

Total Fertility Rate

The total fertility rate (TFR) refers to the average number of births that a woman would have at the end of her reproductive life. This is an important indicator in assessing the impact of programs on family planning and reproductive behavior.

The TFR between 1995 and 1998 as estimated from the 1998 National Demographic and Health Survey (NDHS) is 3.7 children per woman (*NSO et al 1998*). This is lower than the TFR in 1990–93, which was 4.1 children per woman. Although there was a reduction, the Philippines still has the highest TFR in Southeast Asia. The TFR in Malaysia is 3.2 children per woman, Indonesia (2.3), Thailand (2), and Singapore (1.7) (*NSO et al 1998*).

Figure 3. Projected Total Fertility Rate, Philippine, 1995-2004



Source: Philippine Statistical Yearbook, 1998

The trend of projected TFR from 1995 to 2004 is declining, but the change is minimal from 3.76 children per woman in 1995 to 3.08 in 2004. In 1999, the TFR in the country is estimated at 3.36 children per woman. The National Capital Region (NCR) has the lowest TFR at 2.13 children per woman while Eastern Visayas has the highest TFR at 4.73 children per woman in 1999.

The TFR varies with location and education (*NSCB 1998*). The estimated TFR in urban areas is 3 children per woman. In rural areas it is 4.7 children per woman. Women without education have a TFR of 5.01, similar to the TFR of women with elementary education only (5 children per woman). Among those with high school and college education, the TFR is 3.64 and 2.90 children per woman, respectively.

Infant Mortality Rate

The infant mortality rate (IMR) per 1,000 live births in the Philippines is very high compared to that in neighboring Malaysia, Thailand, Singapore, Brunei, and Japan (*SEAMIC 1998*). However, data from various sources indicate a declining trend of IMR in the country (*NSO et al 1998* and *NSCB 1998*). The Vital Registration System showed

Figure 4. Infant Mortality Rate Per 1,000 Live Births

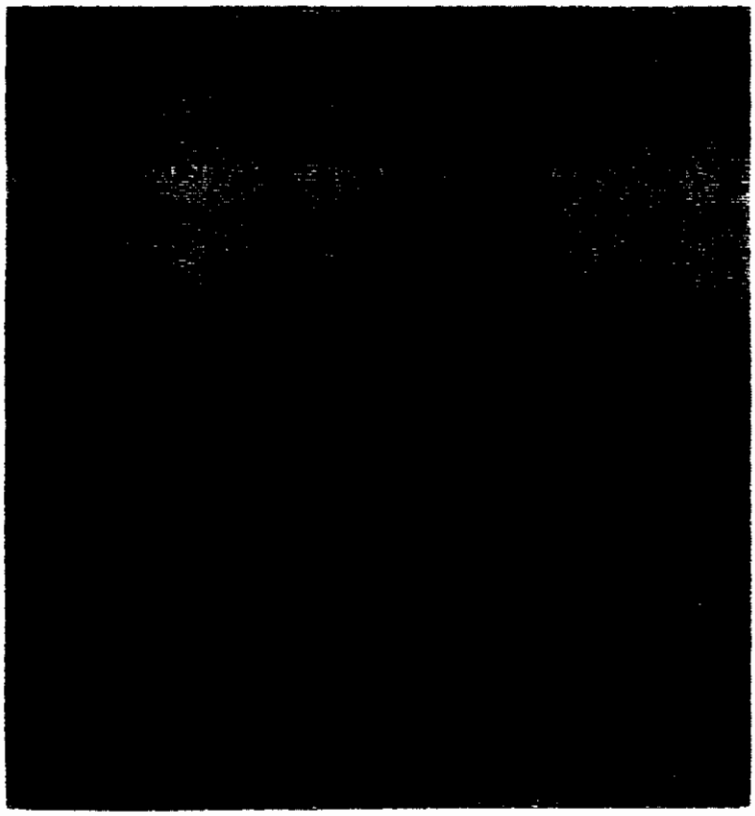
Source: Philippine Statistical Yearbook, 1998

a reduction from 62 in 1970 to 24.3 in 1990. The 1998 NDHS estimated the IMR at 45.3 in 1985, 36.8 in 1990 and 35.3 in 1995. IMR slightly dropped from 57 in 1990 to 49 in 1995 as reported by NSCB.

IMR varies with socioeconomic and demographic factors as determined in the 1998 NDHS (*NSO et al. 1998*). Within the 10-year period before the survey, IMR in urban areas was 30.9 while in rural areas it was 40.2. The lowest IMR was in Metro Manila (23.7) followed by Central Luzon (23.6) and Western Visayas (26.0). The three regions with highest IMR are Eastern Visayas (69.8), ARMM (55.1) and CARAGA (53.2). High IMR is noted among infants of mothers with no education, no antenatal and delivery care, and aged below 20 and above 40 years. IMR is also high among male infants, small or very small infants, birth order number seven and above, and previous birth interval below two years. Data from the Department of Health also show wide regional differences in IMR.

The two most common causes of infant deaths are respiratory conditions of the fetus and newborn and pneumonia. Others are congenital anomalies, diarrheal diseases, birth injuries and difficult labor, septicemia, meningitis, avitaminosis and other nutritional deficiencies, other diseases of the respiratory system and measles.

The factors associated with high IMR and the 10 leading causes of IMR point to several areas that need to be addressed. These include not just improving the maternal and child health care programs but uplifting socioeconomic conditions as well.



Maternal Mortality Rate

Maternal mortality or deaths of women during pregnancy, at child birth, or in the period after childbirth is one of the important indicators of the nation's health. Based on the reported maternal mortality rate (MMR) in 1970 to 1995, the country's health situation hardly improved unlike in other Southeast Asian countries. The Philippines has an MMR of 190 per 100,000 live births in 1970 and 179.7 in 1995. In 1995, it ranked second to Indonesia with an MMR of 312 to 385 and very far behind Malaysia, Thailand, Japan and Singapore that have an MMR of 20, 10.7, 7.6 and 4.1 per 100,000 live births, respectively (*SEAMEO 1998*).

Table 3. Ten Leading Causes of Infant Mortality, Number and Rate per 100,000 Population Philippines, 1989-1993 and 1994

Leading Causes of Death	5-Year Average (1989-1993) Number	Rate	% of Infant Deaths to Total Deaths	1994 Number	Rate	% of Infant Deaths to Total Deaths
1. Respiratory conditions of fetus and newborn	5,6[illegible]	[illegible]	[illegible]	5,854	[illegible]	15.5
2. Pneumonia	9,1[illegible]	[illegible]	[illegible]	5,681	[illegible]	[illegible]
3. Congenital anomalies	2,1[illegible]	[illegible]	[illegible]	2,890	[illegible]	7.7
4. Diarrheal diseases	1,6[illegible]	[illegible]	[illegible]	1,927	1.2	5.1
5. Birth injury and difficult labor	1,1[illegible]	[illegible]	[illegible]	1,690	[illegible]	4.5
6. Septicemia	1,3[illegible]	[illegible]	[illegible]	844	0.5	2.2
7. Meningitis	2[illegible]	[illegible]	[illegible]	533	0.3	1.4
8. Avitaminosis and other nutritional disorders	1,8[illegible]	[illegible]	[illegible]	530	0.3	1.4
9. Other diseases of the respiratory system	3[illegible]	[illegible]	[illegible]	43[illegible]	[illegible]	[illegible]
10. Measles	8[illegible]	[illegible]	[illegible]	34	[illegible]	[illegible]

Source: PHS, 1994

The MMR in 1991-97 is 172 per 100,000 live births as estimated from 1998 NDHS (*NSCB 1998*). This is slightly lower than the estimated MMR of 209 per 100,000 live births in 1987-93 based on the 1993 National Demographic Survey. The MMR slightly improved from 209 per 100,000 live births in 1990 to 180 per 100,000 live births in 1995. The MMR was highest in ARMM and Northern Mindanao and lowest in NCR and Southern Tagalog.

Among Filipino women, the lifetime risk of dying from maternal causes is one in 100 (*NSO et al. 1998*). Maternal deaths made up less than one per cent of the total deaths in the country (*NSCB, 1998*), but they contribute 14 per cent of all deaths in women aged 15-49 (*NSO et al. 1998*).

Figure 5. Maternal Mortality Rate Per 1,000 Live Births,

Source: NCSB, 1998

Table 4. Main Causes of Maternal Mortality, Number and Rate per 100,000 Live Births and Percentage Distribution Philippines, 1994

Leading Causes of Maternal Deaths	Number	Rate	Percentage Distribution
1. Neonatal delivery complications related [illegible]	711	0.3	31.7
2. Hypertension [illegible]	588	0.2	21.7
[illegible]	564	0.2	[illegible]
[illegible]	176	0.1	[illegible]
[illegible]	[illegible]	0.1	[illegible]

Maternal deaths are mainly due to postpartum hemorrhage, hypertension and its complications, sepsis, obstructed labor and complications from abortions. Most of these can be prevented through quality maternal care.

Table 5. Ten Leading Causes of Morbidity, Number and Rate per 100,000 Population Philippines, 1997

Causes	Number	Rate
1. Diarrheas	845,303	1,322.3
2. Pneumonia	638,182	999.2
3. Bronchitis	[illegible]	[illegible]
4. Influenza	[illegible]	[illegible]
5. Hypertension	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Leading Causes of Morbidity

As in the past, most of the 10 leading causes of morbidity are communicable diseases. From 1989 to 1997, these include diarrhea, pneumonia, bronchitis, influenza, tuberculosis, malaria and varicella. Sometimes measles and dengue are among the top 10 due to outbreaks. Leading non-communicable causes are diseases of the heart, hypertension, accidents and malignant neoplasms.

The prevalence of communicable diseases is still very high while that of non-communicable diseases is increasing. This double burden of disease places a great toll on the health and economy

of the people and the nation as a whole. As the Philippines industrializes and becomes more urbanized, and with the increase in life expectancy and improvement of the control of communicable diseases, the disease burden is expected to shift to non-communicable diseases. Strategies must be in place to address current and future situations on disease burden.

Leading Causes of Mortality

Unlike the 10 leading causes of morbidity, deaths are mainly due to non-communicable diseases, and the trend is going up. Diseases of the heart and the vascular system are the two most common causes of deaths. These comprised 39.6 percent of the deaths attributed to the 10 leading causes. The rank of cancer deaths increased from fifth in 1975-90 to fourth in 1995. Pneumonias, TB and diarrheal diseases consistently remain among the 10 leading causes of deaths. Diarrheal deaths, however, have significantly lessened. Deaths due to accidents and injuries are increasing and must be aggressively addressed. Diabetes mellitus is emerging as one of the leading causes of death. Meanwhile, deaths due to kidney diseases, avitaminosis and other nutritional disorders are no longer in the top 10 leading causes of deaths but these are still of serious concern. Deaths from measles have significantly decreased.

Table 6. Ten Leading Causes of Mortality, Number and Rate per 100,000 Population [illegible], 1995

Causes	Number	Rate
[illegible]	[illegible]	73.2
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Table 7. Trend of Leading Causes of Mortality
Philippines, 1975-1995

Rank	1975	1980	1985	1990	1995
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

THE PHILIPPINE HEALTH SECTOR

Health Care Delivery System

The state recognizes health as a basic human right. It protects and promotes the right to health of the people and instills health consciousness among them.

Some significant milestones in the country's public health care system in the past 25 years are: adoption of Primary Health Care in 1979; integration of public health and hospital services in 1983 as per Executive Order (EO) 851; re-organization of the DOH in 1987 in accordance with EO 119 and devolution of health services in 1992 to LGUs as mandated under the Local Government Code of 1991 (RA 7160). Currently, the DOH is streamlining its organization and functions as mandated by EO 102.

The DOH is the lead agency in health. It maintains specialty hospitals, regional hospitals and medical centers. The DOH has a regional field office in every region. It has a provincial health team made up of representatives to the local health boards and retained personnel involved in controlling malaria and schistosomiasis.

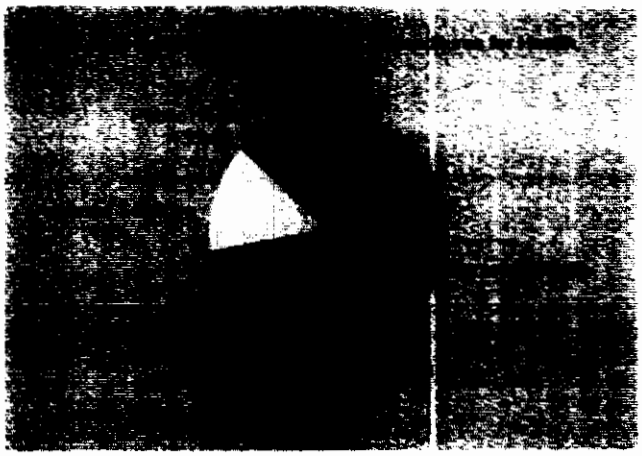
With the devolution of health services to the LGUs, the provincial and district hospitals are under the provincial government while the municipal government manages the rural health units (RHUs) and barangay health stations (BHSs). In every province, city or municipality, there is a local health board chaired by the local chief executive. Its function is mainly to serve as advisory body to the local executive and the *sangguniian* or local legislative council on health-related matters.

The private sector's involvement in maintaining the people's health is enormous. This includes providing health services in clinics and hospitals, health insurance, manufacture of drugs, medicines, vaccines, medical supplies, equipment, and other health and nutrition products, research and development, human resource development and other health-related services.

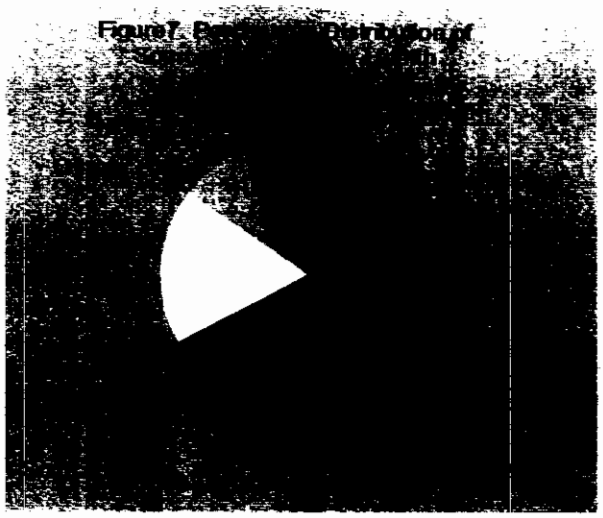
Although the health care system is extensive, its access, especially by the poor, is hampered mainly by high costs and physical and sociocultural barriers.

Health Care Expenditures

Of the P540.783 billion total national government expenditures in 1998, only 2.83 percent went to health. This percentage is lower compared to 3.02 percent in 1997 but slightly higher than in 1996 which was 2.7 percent (*NSCB 1998*).



In 1997, only 3.5 percent of GNP or around P88.4 billion were spent on health by both the government and private sectors. This amount is below the health spending prescribed by the World Health Organization (WHO) for a developing country, which is at least 5 percent of the GNP. Seventy-



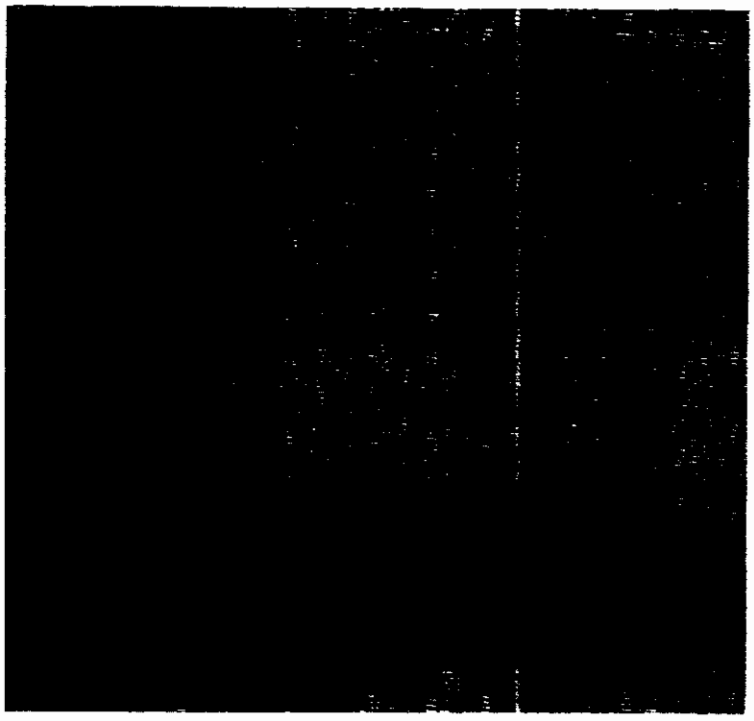
two per cent or around P63 billion went to personal health care services. Public health care services account for only 13 percent or 12 billion pesos. Overhead services needed to run the health system cost P13 billion or 15 percent of the total health expenditures.

Around 46 percent of the total health spending were paid out-of-pocket of individual families. The financial burden on individual families is heavy. On the other hand, government's share was only 39 percent (21 percent national and 18 percent local). The National Health Insurance Program financed only 7 percent of the total health spending while private health insurance and community-based health financing schemes shared 8 percent.

Although health spending has increased in real and per capita terms from 1991 to 1997, the health sector is not spending enough nor effectively. There was heavy spending on hospital or curative care and not enough for preventive and promotive health services. The subsidies for health services are poorly targeted. The large government hospitals in Metro Manila get the biggest share of the budget to the detriment of primary care services at the local level.

Health Human Resources

The human resources for health are enormous but unevenly distributed. Most health practitioners are in Metro Manila and other urban centers. In 1990-95, there were 82,494 doctors, 259,629 nurses, 102,878 midwives (*WHO 1998*).



In 1997, there were 3,123 doctors, 1,782 dentists, 4,882 nurses, and 15,647 midwives employed by LGUs while the DOH had 4,232 doctors, 179 dentists, 4,837 nurses and 241 midwives. The ratio of government health workers to the population was one doctor per 9,727 people, one dentist per 36,481, one nurse per 7,361 and one midwife per 4,503.

Table 9. Number of National Government (DOH) Doctors and other Health Practitioners (Retained Personnel) By Region

Philippines, 1997

AREA	Doctors	Dentist	Nurses	Midwives
Philippines	232	179	4,837	241
NCR	127	17	113	34
CAR	72	15	166	8
Region 1	165	5	177	6
Region 2	99	6	135	6
Region 3	215	6	215	4
Region 4	274	9	207	3
Region 5	24	5	158	4
Region 6	40	9	332	5
Region 7	81	8	368	2
[illegible]	61	4	166	1
[illegible]	38	6	142	3
[illegible]	26	4	208	3
[illegible]	53	6	223	4
[illegible]	11	5	111	1
[illegible]	91	21	46	1
[illegible]	55	53	2070	156

[illegible] are included in Regions 9,10,11 and 12

Table 10. Number of Hea[illegible] by Category per Re[illegible] Philippines, 199[illegible]

AREA	RHU	BHS	HOSPITALS Public	Private	Total
Philippines	2405	13,556	644	[illegible]	[illegible]
NCR	366	427	43	[illegible]	[illegible]
CAR	96	580	32	[illegible]	[illegible]
Region 1	147	892	36	[illegible]	[illegible]
Region 2	98	676	38	[illegible]	[illegible]
Region 3	252	1,398	47	[illegible]	[illegible]
Region 4	292	2,083	97	[illegible]	[illegible]
Region 5	129	948	47	[illegible]	[illegible]
Region 6	144	1,420	56	[illegible]	[illegible]
Region 7	222	1,282	51	[illegible]	[illegible]
Region 8	159	838	48	[illegible]	[illegible]
Region 9	102	606	28	[illegible]	[illegible]
Region 10	80	680	22	[illegible]	[illegible]
Region 11	94	385	33	[illegible]	[illegible]
Region 12	54	642	18	[illegible]	[illegible]
ARMM	90	210	15	[illegible]	[illegible]
CARAGA	80	489	33	[illegible]	[illegible]

Source: PHS, 1997

Health Facilities

There are various health facilities, public and private, that serve the health needs of the Filipinos. In 1997, there were 1,812 hospitals with total bed capacity of 81,905 or one per 873 people. Although only 644 or 36 percent are public hospitals, these contribute 42,070 beds or 52 percent of bed capacity. There were 2,405 RHUs and 13,556 BHSs. On the average, each RHU serves 29,746 people while each BHS catered to 5,277 people.

2
IMPROVING THE HEALTH OF THE MASSES

The recent change in political leadership provides the Philippines with the chance to revitalize the health care system. This is in line with the administration's thrust to prioritize delivery of services to the masses and improve the quality of life of all Filipinos, especially the poor. The differences in health status among various groups and regions in the country have widened through the years. These disparities indicate deficient economic and social policies, showing the need to reprioritize interventions to promote equity, fairness and immediate action.

Unnecessary and unfair gaps in the health care delivery system that deprive the poor of access to basic services must be reduced. The system must work efficiently to reach the highest possible health standards that can be shared by all Filipinos, given the limited resources available for health. Although socioeconomic differences significantly influence health status, the equitable distribution of quality health services is an important measure of fairness in the country.

Revitalizing the health care system must be seen within the broader context of several forces affecting the delivery of basic health services in the past two decades. Among these factors are the devolution of health services to local governments, passage of national legislation for universal coverage for health through social insurance, the epidemiologic shift and current double burden of disease brought about by the rise in degenerative diseases and the reemergence of previously controlled infectious diseases, demographic trends pointing to longer life span, greater number of adolescents and youth, rapid urbanization, industrialization, environmental degradation and climate change.

Under these realities, the **health sector** must work to attain a common **vision** of **health for all Filipinos.** Its **mission** is **to ensure accessibility and quality of health care to improve the quality of life of all Filipinos, especially the poor.**

BASIC PRINCIPLES TO ACHIEVE IMPROVEMENTS IN HEALTH

The overview of the general health status of Filipinos points to several **basic principles** to improve health.

Universal access to basic health services must be ensured. Basic health services must be effectively and efficiently delivered to communities and families. Preventive and promotive health will be pursued to bring down expenses on curative care. Providing basic health services should be prioritized and safeguarded against inequitable distribution. This emphasizes better access to health services for the poor, the underserved and the marginalized.

While mortality rates have been reduced and nutrition status improved in the past decades, the gains are modest compared to the achievements of Southeast Asian neighbors. Considering the country's economic growth and development, better health status could have been attained. With a high population growth rate at 2.3 percent, steps to attain sustainable population growth cannot be pursued separately from other public health interventions.

The health and nutrition of vulnerable groups must be prioritized. As the country marches toward greater economic development, changes in society and the environment have resulted in increasing numbers of populations at risk. Almost 50 percent of Filipinos now live in urban areas. Most urban areas are not prepared to accommodate the influx of migrants. Hence, provisions for basic needs like food, water and shelter are inadequate.

Continuous overseas deployment of Filipino workers has left many families motherless or fatherless, resulting in the breakdown of traditional values and support systems for childcare. The social impact of this phenomenon has yet to be quantified, but the upsurge in family violence, incest and child abuse may be related to disruptions in family life. Rapid industrialization without preparations for environmental and occupational health and safety threatens communities and thousands of workers. Environmental degradation has displaced farmers, fishermen and indigenous communities. They must now seek other means of livelihood to survive.

Infectious diseases largely affect the poor. Patterns of health service utilization of the poor and the less educated groups have been improving, but these remain substantially lower than the rest of the population. Health services to which the poor have access are limited to primary health care. To date, it is estimated that 40 percent of all Filipinos still die without seeing a doctor. On the other hand, higher income groups characteristically go to private tertiary medical centers even for preventive and promotive health care. Access to care must be addressed for health status to significantly improve.

The epidemiologic shift from infectious to degenerative diseases must be managed. Diarrheas, acute respiratory infections, tuberculosis, dengue, malaria, pneumonias and other infectious diseases continue to be the leading causes of illness in the country. However, as far as deaths are concerned, the burden of disease has shifted to a

point where degenerative diseases make up seven out of 10 leading causes of death for all ages.

The double burden of disease from both infectious and degenerative causes has overloaded the health system, draining precious resources for health and diminishing the country's potential for social, economic and political development. Resurgence of previously controlled diseases and the emergence of new diseases further strain the health system. Sustained investments for infectious disease control must be made. Meanwhile, effective technologies and strategies to address degenerative diseases must be set up. Health promotion must be strengthened, and better systems for monitoring disease prevention and control programs, both for infectious and degenerative diseases, need to be in place.

The performance of the health sector must be enhanced. Six years after the devolution of health services, the assumption of devolution-defined roles and functions by both the DOH and LGU's is in order. Support capacities for health services must be improved under a devolved set-up by strengthening field health offices at the regional, district and local levels. Stronger partnerships with LGUs, non-government organizations (NGOs), other national agencies, the academe, the media and the private sector must be built.

Investments in health must increase from 3.5 percent of the gross national product (GNP) to five percent of GNP in 2004. Investments must be judiciously prioritized to advance public health and primary health care. Management and financing issues in hospitals and personal health care must be addressed. Social health insurance must be expanded in scope and coverage to reduce family and out-of-pocket expenditures for personal health care. Regulatory capabilities of the health sector need to be strengthened to assure quality health care.

In order to address these concerns, a health sector reform process must be initiated to institute changes in the way health care is delivered, regulated and financed. Ultimately, the reform process is expected to improve the health status of the people through greater and more effective coverage of national and local health programs, increased access to quality health services especially by the poor, and reduced financial burden on individual families.

SETTING THE GOALS FOR THE NATION'S HEALTH

The **DOH**, as the **lead agency in the health sector, sets the goals for the nation's health**. For this, the DOH, in partnership with all other agencies and organizations in the health sector and with communities, families and individuals, endeavors to attain these goals and objectives to improve the health of Filipinos.

1. **Improve the general health status of the population.**
   - Reduce infant mortality rate
   - Reduce child mortality rate
   - Reduce maternal mortality rate
   - Reduce total fertility rate
   - Increase life expectancy and the quality of life years.
2. **Reduce morbidity, mortality, disability and complications from the following diseases and disorders.**
   - Diarrheas and other food and water-borne diseases like typhoid, cholera and hepatitis A
   - Pneumonias and acute respiratory infections
   - Tuberculosis

- Dengue
- Intestinal parasitism
- Sexually transmitted diseases, HIV-AIDS and other reproductive tract infections
- Hepatitis B
- Dental caries and periodontal diseases
- Rheumatic heart disease and rheumatic fever
- Coronary artery disease, hypertension and hyperlipidemia
- Stroke
- Cancer
- Diabetes
- Asthma and chronic obstructive pulmonary diseases
- Nephritis and chronic kidney diseases
- Mental disorders
- Protein-energy malnutrition
- Iron deficiency anemia
- Obesity
- Accidents, traumas and injuries

3. **Eliminate the following diseases as public health problems.**
   - Schistosomiasis
   - Malaria
   - Filariasis
   - Leprosy
   - Rabies
   - Vaccine preventable diseases: measles, tetanus, diphtheria and pertussis
   - Vitamin A deficiency
   - Iodine deficiency disorders
4. **Eradicate poliomyelitis.**
5. **Promote healthy lifestyle.**
   - Promote healthy diet and nutrition.
   - Promote physical activity and fitness.
   - Promote personal hygiene.
   - Promote mental health and less stressful life.
   - Prevent smoking and substance abuse
   - Prevent violent and risk-taking behaviors
6. **Promote the health and nutrition of families and special populations.**
   - Neonatal and infant health
   - Children's health
   - Adolescent and youth health
   - Adult health
   - Women's health
   - Health of older persons
   - Health of indigenous peoples
   - Health of overseas Filipino workers
   - Health of differently abled persons
   - Health of the rural poor
   - Health of the urban poor
7. **Promote environmental health and sustainable development.**
   - Healthy homes
   - Healthy schools
   - Healthy workplaces and establishments
   - Healthy communities, towns and cities

PRIMARY STRATEGIES TO ACHIEVE HEALTH GOALS

To achieve the national goals and objectives for health within the medium term period, various strategies consistent with the administration's thrust to serve the masses need to be pursued to revitalize health services at the different levels of the health care delivery system. Below are the primary strategies to carry out the national objectives.

Increasing Investments for Primary Health Care

Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology. The technology is made universally accessible to individuals and families in the community through their full participation and

at a cost that the community and country can afford to maintain.

Emphasis is on reiterating the primary health care approach as the framework for ensuring the government mandate articulated in the 1987 Constitution: "The state shall protect and promote the right to health of the people and instill consciousness among them."

The primary health care (PHC) approach, especially in a devolved set-up, ensures the widest participation of people and their communities in attaining health for themselves. Ultimately, this approach applies the principle of putting people at the center of development. Human development should not be seen as a by-product or an after-effect of economic development as these two must occur simultaneously.

The PHC approach gives the widest benefit from health programs as it allows the sharing of the advantages of these programs by the greatest number of people and fully uses limited health resources. Hence, the different health programs and services must maximize opportunities created by the approach to ensure greater participation of various sectors with the view of community ownership and sustained public health programs at the lowest levels.

Preventive and promotive health services at the community levels must be strengthened and supported. The gains of family health and nutrition programs must be promoted and sustained to provide people with effective services to ensure health from infancy to old age. A healthy lifestyle for the individual and the family and a healthy environment in the home, the school, the workplace and the community must be promoted.

With the growing burden of degenerative diseases, the government must define its role, stimulate the partnerships and establish the mechanisms to generate resources required for comprehensive management. The burden of infectious diseases must be decisively reduced to free the health system to gather its forces against emergent health problems.

All these cannot occur unless investments for primary health care interventions increase at all levels of the health care delivery system and in proportion with population increase. Furthermore, traditional targets must be expanded to answer changing demographic and health trends, notably the rise in the numbers of the elderly and the shift of disease burden toward degenerative diseases.

New mechanisms are needed to make block grant funds and cost-sharing schemes available to LGUs, other agencies and organizations in the health sector. New strategies are needed to enlist other participants involved in health care delivery such as the academe, NGOs, health professionals, the media and private sector in meeting specific standards for health programs and services. Necessarily, active social marketing for more investments in primary health care must be done.

Development of National Standards and Objectives for Health

As the national lead agency in the health sector, the DOH is mandated to ensure the delivery of quality health care by all participants in the health system. National standards should be developed to guide various implementors of health programs at the local level in planning, carrying out and efficiently using limited resources for health.

This strategy shows the need to strengthen the DOH's capabilities in developing policies, protocols, clinical and public health guidelines, research tools and information systems that will support local governments, other agencies and organizations within the health sector in meeting national health standards and attaining national health objectives. Broad consultations and partnerships with health research institutions, community health service providers and other stakeholders are needed to attain this.

Assurance of the Quality of Health Care

Certain practices in the health sector have remained largely unchecked, thereby affecting the quality of health services. In many areas, the quality of health care remains wanting and yet the cost of care, specifically privately provided health care, has become expensive and beyond the reach of ordinary people. Some health facilities have deteriorated and, in most cases, the poor continue to have little access to quality basic health services. Added to this are the high cost of drugs and medicines and the presence of poor quality drugs in the market. These have been attributed partly to the weak enforcement of health regulations.

The DOH must strengthen the regulations involving health facilities and services through its licensing mandates and through the national health insurance accreditation and benefit payments. Licensing and regulation of health products and devices like drugs, cosmetics and medical equipment must be improved. Assurance of quality and affordability of essential drugs and medicines must be prioritized. A mechanism for assessment and regulation of technological innovations and activities that affect health must also be institutionalized and strengthened.

A quality improvement program for all health facilities and services at all levels of the health care system must be developed. Personnel and funds need to be mobilized to support the program. Strategies must be developed to enlist the support of LGU's in investing resources for quality health care and for people to demand quality health services.

All regulatory agencies, their systems and procedures must be strengthened. Regulatory capabilities from the regional to the LGU levels need to be developed. This approach will improve the enforcement of standards and regulations to ensure quality health care.

Support to Local Health System Development

Functional local health systems to carry out public health programs and deliver personal health care services must be developed. Capacity building for LGU's is in order as they step into their new roles after health services are devolved. Systems to bridge deficient local health resources and service delivery have to be set up by revitalizing district health systems within the context of the Local Government Code of 1991.

A better mechanism for providing resources to LGU's for upgrading personal care services at the provincial and district hospitals and for meeting the needs of public health services at the RHU's and health centers must be set up. Revitalization of the hospital networking system and the patient referral system between the hospital and the health center at the local level is necessary. Block grants for public health programs and district hospital needs must address the problem of congestion of tertiary hospitals and sporadic outbreaks of preventable illnesses.

Expanding epidemiology services, modernizing laboratories and providing of technical assistance will be the major strategies for disease prevention and control. Private sector participation needs to be strengthened to fill the backlogs in the local health delivery system. A strong local public health system supported by well-trained and highly motivated frontline health service providers is a must to attain the national objectives for health.

Support for Frontline Health Workers

As a critical link in the health service delivery network, the frontline health workers render health services for the people and mediate national health programs and initiatives with the community. Recognizing this crucial role played by these health care providers, multi-sectoral support for a frontline health worker development program will be harnessed. This addresses the problem of health human resource infrastructure in primary health care.

The training programs for frontliners will be rationalized. Training capabilities for primary health care and public health among existing training institutions for health professionals will be developed and used to resolve training interventions that are diluted by three-tiered re-echoing from the central to regional to local levels.

Enlisting the help of such institutions is also a means to create a critical mass of supporters for public health programs and services. The strategy will give the DOH more time to focus its energy on developing policies, standards, technical assistance programs and research.

3
NATIONAL OBJECTIVES FOR HEALTH: DISEASE PREVENTION AND CONTROL

It has been noted that the gains against diseases were the results not of treatment or cure alone, but in most cases, by measures that prevent and control their onset and spread into problematic proportions. The remarkable victory worldwide against infectious diseases (smallpox, polio, measles among others) was won by making available vaccines that prevent them. Other common diseases were controlled by improved sanitation and personal hygiene, better nutrition and lifestyle.

Knowledge about the origins and patterns of diseases provide significant insights that translate into preventive and curative measures and strategies. Over the years, medical research and technology development continue to increase the health systems' capacity for prevention and cure.

The common killer diseases of children have come close to eradication through immunization, although tuberculosis and measles remain as major public health problems in the Philippines. With the increase of life expectancy among Filipinos and the effective control of communicable diseases, the disease burden is expected to shift to non-communicable diseases. Now more than ever, the country's health delivery system is faced with the double burden of disease from both infectious and degenerative causes.

Against this background, relying entirely on the treatment of diseases is expensive and irresponsible if attempt at prevention is not given its full measure. It makes sense therefore, that the best strategy to bring down the cost of health and ensure the accessibility of quality health care is preventive health services. It is a global phenomenon that has positive documented results. On this score, the

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National Objectives for Health (NOH) have clearly identified the health goals and targets for public health actions up to year 2004 that lean heavily on prevention and control without prejudice to the application of effective medical treatment as well.

The NOH for 1999-2004 are focused on the country's major health problems, specific health issues that cut across several disease prevention and control measures and special target groups that need urgent attention. The goals of NOH are intended to be achieved within the time frame indicated using available resources and renewed efforts.

The NOH underscore preventive and promotive health services especially at the grassroots where some of the most vulnerable sectors (the poor and those in equally difficult circumstance) of the population are. The move is also calculated to tip the scale of an otherwise inequitable health expenditure towards the need of the greater number of Filipinos.

INFECTIOUS DISEASES

The children and the poor suffer most from infectious diseases and their survival is often at risk from fatal infection. Eight out of the ten leading causes of morbidity in the Philippines in 1997 are from infectious diseases, while deaths are mainly due to non-communicable diseases. Although the prevalence of communicable diseases is generally on the decline, the burden from these diseases is still very high and would remain as a major concern of the country's health system.

The targets of the National Objectives for Health in the medium-term is the eradication and elimination of certain infectious diseases as public health problems and the reduction of morbity, mortality and complications from communicable diseases. Within the medium-term period, the NOH target the elimination of malaria, filariasis, schistosomiasis, the vaccine-preventable diseases, leprosy and rabies as public health problems; the eradication of poliomyelitis and the reduction of morbidity, mortality, disability and complications from tuberculosis, pneumonias, diarrheas, dengue, sexually transmitted diseases, HIV/AIDS, and other reproductive tract infections, and dental caries and periodontal diseases.

Communicable diseases such as measles, tuberculosis, tetanus, diphtheria, pertusis, poliomyelitis and hepatitis-B may be eradicated and prevented successfully by immunization, improved sanitation, better nutrition and ultimately, by improved quality of life. It is unfortunate that measles still ranks high in the leading causes of illness among children. It is no small victory though, that death from measles has declined dramatically in the last 10 years. This development is due to the successful nationwide immunization campaign undertaken zealously over the years.

Mortality trend from diarrheas and acute respiratory infections (ARI) or pneumonia is declining. However, these diseaseas are still the leading causes of death among children. Studies indicate that the key to reducing deaths from ARI is to ensure better access to and correct management of pneumonia, early treatment and steady supply of antibiotics through first level or community-based facilities. Protection of infants from pneumonia should start with full immunization coverage and increase coverage of Vitamin A supplementation among infants and children. On the other hand, the key to reducing morbidities from diarrhea is to improve sanitation and provide better nutrition.

Tuberculosis (TB) continues to plague the most productive sector (30-59-years group) of our population and is ranked fifth in the 10 leading causes of deaths and sixth in the leading causes of illnesses in the country. Its burden on the cost of personal and public health is heavy and the financial strain on those affected by the disease is considerable. New TB cases are developing yearly and are two times more common in the urban areas than in rural areas. More effective strategies for monitoring, case finding and disease management to reduce the risks from tuberculosis and increase protection of the population are among the goals and targets to reduce morbidity and mortality from tuberculosis.

The prevention and control of sexually transmitted diseases (STDs) and other reproductive tract infections (RTIs) can be used as an effective strategy in curbing the HIV/AIDS epidemic which has become a major public health problem. An integreated approach in the programs and services for the prevention and control of STDs was influenced by the advent of the AIDS problem in the Philippines in the 1980s. In late 1990, the program was expanded and redirected to include other RTIs with reproductive health as the framework.

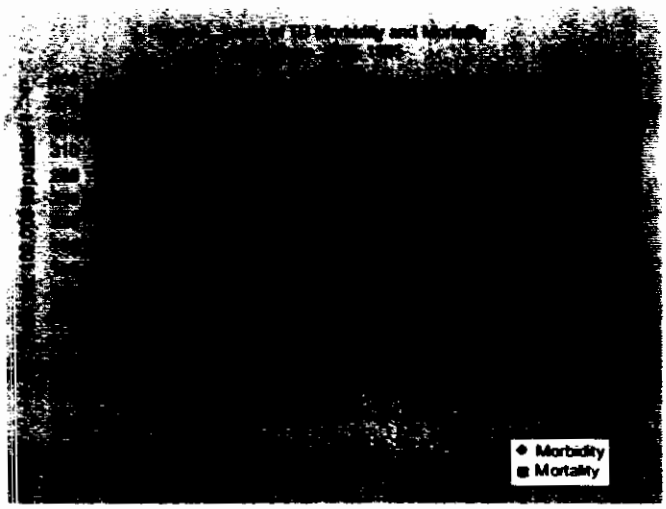
The ever present danger of malaria, filaria and dengue is caused by mosquitoes. Malaria is still one of the 10 leading causes of morbidity in the country but is no longer a leading cause of death. In recent years more dengue epidemics have been reported in urban areas and may have been caused by poor environmental sanitation that favors breeding of mosquitoes. The elimination of mosquito breeding places is still the most effective preventive and control measures against these infectious diseases. Filariasis on the other hand is a parasitic infection transmitted by mosquitoes and is considered as the second leading cause of permanent, long-term disability among infectious diseases.

The fight against infectious diseases has not yet run its full course, and the economic and social cost will remain high, but it is projected that over the coming years more children will grow to adulthood with less risk from fatal infections and less people will die from infectious diseases. However, the emergence of new infectious diseases and the re-emergence of previously controlled infectious diseases must be closely watched to prevent them from becoming major health problems.

TUBERCULOSIS

Tuberculosis (TB) is a chronic infectious disease caused by *Mycobacterium tuberculosis*, a bacteria transmitted through airborne droplets from the sputum of persons with pulmonary tuberculosis while coughing or sneezing. It is a curable disease, but if left untreated can lead to disabling condition and death. Partial treatment of cases may cause multi-drug resistance that can lead to non-cure.

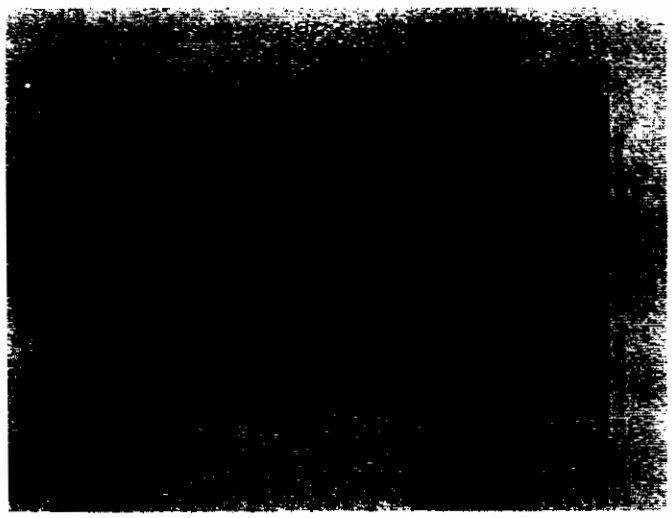
Tuberculosis is a major health problem in the Philippines. In 1994 it ranked fifth in the 10 leading causes of deaths and sixth in the ten leading causes of illnesses. The mortality rate from tuberculosis has fallen in the past 20 years, from 69 deaths per 100,000 population in 1975 to 39 deaths per 100,000 population in 1995. At this rate, around 75 Filipinos die every day from tuberculosis. Deaths were higher among males (66 percent) and among the productive age group 15 to 64 years old (60 percent). The morbidity rate from tuberculosis shows a more variable trend although it has also fallen from 314 cases per 100,000 population in 1975 to 173 cases per 100,000 population in 1995.



The 1997 National Tuberculosis Prevalence Survey (NPS) gave a more accurate measure of tuberculosis in the country. The annual risk of tuberculosis infection (i.e., probability of a child getting infected with TB within a year), a more sensitive indicator, showed an insignificant decline in 15 years, from 2.5 percent in 1982 to 2.3 percent in 1997.

Based on the 1998 population, it is estimated that around 100,000 new TB cases are developing yearly. Tuberculosis cases are about two times more common in urban than in rural areas. The TB situation is worse among those living in urban poor communities in Metro Manila, Metro Cebu and Cagayan de Oro. The survey also showed that TB cases are about three times more common among males than females. Most of these cases are in the 30 to 59-years age group.

There are also regional and provincial variations in the magnitude of TB. The 1997 Field Health Service Information System (FHSIS) Report showed a case notification rate of 281 cases per 100,000 population for the entire country. Region 1 had the highest TB notification rate (411 per 100,000), followed by Region 12 (389 per 100,000) and National Capital Region [NCR] (358 per 100,000). However, Region 5 has the highest reported sputum positive cases. The 1997 Tuberculosis Control Service (TBCS) report showed the rate of new smear positive cases was highest in Sulu (343 per 100,000) while the death rate was highest in Siquijor (99.6 per 100,000).



In several studies done in the past, the prevalence of multi-drug resistant cases was noted to be less than 10 percent. The 1998 NDHS showed that the knowledge level about some aspects of TB is quite low: Only 16 percent of respondents correctly answered that TB is due to bacteria and only 40 percent correctly answered that the treatment duration is at least six months. Positive action-taking behavior among those with TB is also low: The 1997 NPS showed that only 21.4 percent of TB symptomatic and 38 percent of TB patients consulted a health provider.

The National TB Control Program has two major components: case finding (identifying TB cases using sputum microscopy) and case holding (ensuring that TB cases complete the prescribed treatment). Sputum examination, the preferred diagnostic tool, is more specific than using x-ray for diagnosis. These activities are integrated with health services being provided by the RHUs and health centers nationwide. A few hospitals have also organized TB control program.

The main strategy of the National TB Control Program is the Directly Observed Treatment Short Course (DOTS). This strategy was piloted in three areas in 1996 and later expanded to 30 areas in 1997 and 1998. The project areas successfully increased the quality of case finding and case holding. The cure rate for TB patients increased from 55 percent to about 80 percent. Nationwide implementation of DOTS is envisioned by year 2001.

Several constraints affect program implementation like: inadequate budget for drugs, poor quality of diagnostic test, poor treatment compliance, irregular program supervision and monitoring, and different approaches in diagnosis and treatment of TB patients by doctors. These problems must be addressed to reach the goal of controlling tuberculosis at a level where it is no longer a public health problem in the Philippines.

Goal: Morbidity and mortality from TB are reduced.

National Objectives for Health by 2004

Health Status Objectives

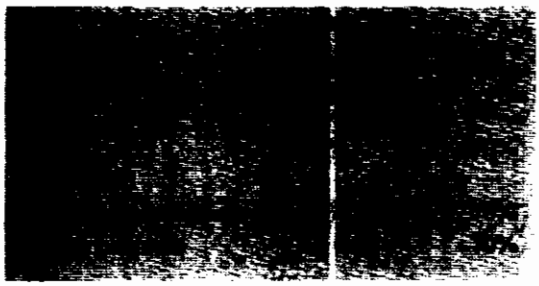
1. Reduce the incidence of sputum positive cases to 84 per 100,000 population.
   (Only about 100,000 smear positive cases are actually reported per year. TB incidence is about one-third of the TB prevalence base on Epidemiology of Tuberculosis by Styblo in 1994)
   (Baseline: 138 per 100,000 based on the prevalence of smear positive cases in 1997, NPS)
2. Reduce the prevalence of smear positive cases to 1.9 per 1,000 population.
   (Prevalence of smear positive cases refers to both the old and new smear positive cases in a population within a year.)
   (Baseline: 3.1 per 1,000 population in 1997, NPS)
3. Reduce the mortality rate from TB to 19.2 deaths per 100,000 population.
   (Baseline: 39.4 deaths per 100,000 population in 1995, PHS)

Risk Reduction Objectives

1. Increase the proportion of TB symptomatic consulting a health provider to 60 percent.
   (Baseline: 21.4 percent in 1997, NPS)
2. Increase the proportion of bacteriologically confirmed TB patients consulting a health provider to 65 percent.
   (Baseline: 38 percent in 1997, NPS)
3. Increase the percentage of contacts of smear positive cases consulting a health provider for diagnosis and treatment.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the case detection rate of smear positive TB cases to 70 percent.
   (Case detection rate is the proportion of the new smear positive cases diagnosed in the population relative to the prevalence of smear positives.)
   (Baseline: 45 percent in 1998, TBCS)
2. Increase the percentage of sputum microscopy centers providing good quality sputum microscopy to 70 percent.



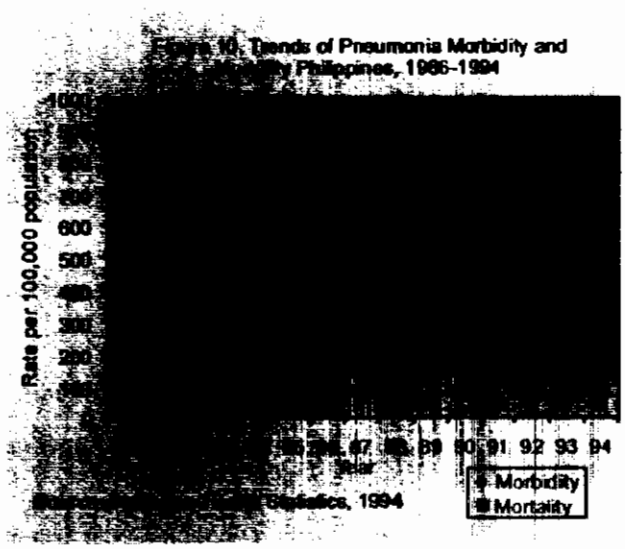
   (A good quality sputum microscopy center is one that has a trained microscopist, functional microscope and adequate laboratory supplies, e.g., reagents, sputum cups and glass slides.)
3. Increase the coverage of identified TB cases provided with full course treatment to 100 per cent.
   (Baseline: 50 percent in 1997, TBCS)

4. Increase the cure rate of smear positive TB patients to 85 percent.
   (*Cure rate is the number of smear positive TB cases who completed treatment and have two smear negative sputum follow-up towards the end of the treatment.*)
   (Baseline: 60 percent in 1997, TBCS)
5. Increase the percentage of population with access to DOTS strategy to 100 percent.
   (Baseline: 31 percent in 1998, TBCS)
6. Increase the coverage of BCG vaccine among infants to 95 percent
   (Baseline: 88.8 percent in 1995, MCHS)
7. Increase the percentage of private doctors complying with the National Consensus on TB Diagnosis and Treatment.
   (Baseline data is established in 2000)

PNEUMONIA

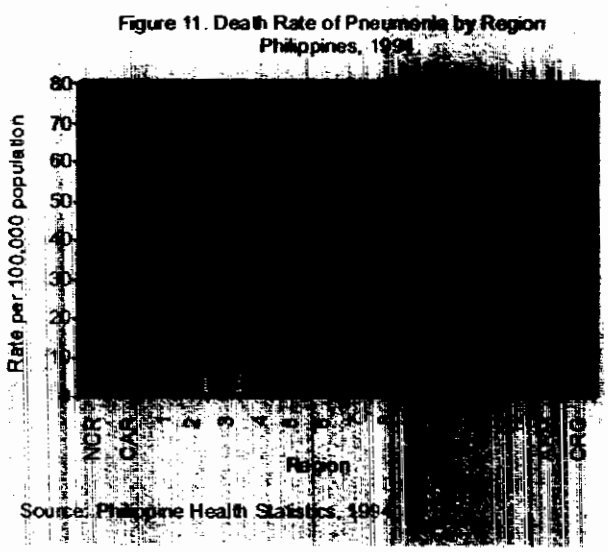
Pneumonia is an infection of the lungs marked by cough and rapid breathing. Among the acute respiratory infections (ARI) pneumonia is one of the most common causes of morbidity and mortality in all age groups but more specifically among children. Both bacteria and viruses can cause pneumonia. In the Philippines, the most common are *Streptococcus pneumoniae* and *Hemophilus influenzae*.

Pneumonia is the second leading cause of illness in 1996 and 1997 and the third leading cause of death in 1994 and 1995. The morbidity trend for pneumonia is increasing from 319.3 cases per 100,000 population in 1987 to 999.2 cases per 100,000 population in 1997. The increase may be attributed to better case finding and reporting, but other factors need to be investigated. In 1993, the morbidity rate for pneumonia is highest in Region 5, followed by CAR, Region 8, Region 10 and Region 9.



On the other hand, the mortality trend for pneumonia is falling from 96.7 deaths per 100,000 population in 1985 to 49 deaths per 100,000 population in 1995. This trend reflects better management of cases. Deaths from pneumonia are highest among children under five years old. Pneumonia has always occupied the number one cause of deaths among infants although the trend is also decreasing from 1990 to 1994. In 1993, about 70 percent of cases and 39 percent of deaths due to pneumonia are in children under-five.

Preliminary results of the 1998 NDHS also showed that ARI is still the leading cause of death among children. Groups with higher risk for contracting pneumonia are: children 12 to 23 months old, children of birth order 6 or higher, children in rural areas, and children born to mothers with low or no education. Highest incidence of cough with rapid breathing was reported in CAR. Among the children who were ill with cough and rapid breathing, 58 percent were taken to a health facility.



The risk factors for pneumonia are undernutrition and low birth weight. Studies in South Asia and Africa showed that increase in measles immunization coverage and significant reduction in the prevalence of underweight or low birth weight have substantial impact on reducing pneumonia deaths (*Division of Diarrheal and Acute Respiratory Disease Control Interim Report 1994*).

Efforts to promote breastfeeding have minimal impact on pneumonia deaths if there is already a high prevalence of breastfeeding. Benefits from Vitamin A supplementation is expected only in cases of measles-associated pneumonia. Research is still required to find out the impact of air pollutants on pneumonia morbidity and mortality.

Specific vaccines against *H. influenzae* and *S. pneumoniae* have been developed. *H. influenzae* type B (HiB conjugate) vaccines are widely used today. The Research Institute for Tropical Medicine (RITM) has done studies to test the efficacy of these vaccines. These studies showed that all HiB conjugate vaccines were immunogenic after three primary doses among Filipino infants.

The key to reducing deaths from ARI is to ensure better access to and timely use of correct management of pneumonia. This requires a staff trained on the standard management protocol for ARI and a steady supply of antibiotics for early treatment based on easily detectable clinical signs. Most pneumonia cases can be detected by observing fast breathing and chest indrawing in children who cough or have difficulty in breathing.

Neonates and young infants with pneumonia may not cough and their normal respiratory rate often exceeds 50 breaths per minute. Bacterial infections in this age group may have non-specific clinical signs, making it hard to distinguish pneumonia from sepsis and meningitis. For these reasons, guidelines for the detection and treatment of pneumonia in young infants differ from those for older infants and young children.

Reducing risk factors, improving case management and ensuring regular supply of appropriate antibiotics through first level facilities and community-based practitioners are the most effective ways of reducing morbidity and mortality from pneumonia. Providing effective referral care for children with severe pneumonia who need oxygen, second-line antibiotics, and greater clinical expertise can do a further reduction in deaths.

Goal: Morbidity and mortality from pneumonia and other acute respiratory infections are reduced.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the incidence of pneumonia to 350 cases per 100,000 children under five years old.
   (Baseline: 506 cases per 100,000 children under five years old in 1995, PHS)
2. Reduce the mortality from pneumonia to 120 deaths per 100,000 children under five years old.
   (Baseline: 140 deaths per 100,000 children under five years old in 1994, PHS)

Risk Reduction Objectives

1. Reduce the proportion of low birth weight infants to 12 percent.
   (Baseline: 16.6 percent of livebirths in 1997, FHSIS)
2. Reduce the prevalence of protein-energy malnutrition (PEM) among children.
   (Health status objectives for PEM is discussed under Diet and Nutritional Disorders)
3. Increase the proportion of parents or caregivers who know when to bring a child with ARI to a health facility to 75 percent.
   (Baseline: 58 percent in 1998, NDHS)
4. Increase the proportion of infants who are exclusively breastfed up to 6 months to 30 percent.
   (Baseline: 20 percent in 1998, NDHS)
5. Increase the proportion of infants who are given proper supplemental feeding at six months of age to 70 percent.
   (Baseline: 60 percent in 1998, NDHS)

Services and Protection Objectives

1. Increase full immunization coverage of infants to 95 percent.
   (Baseline: 90 percent in 1997, FHSIS)
2. Increase the percentage of government facilities providing adequate management of pneumonia and other acute respiratory infections to 90 percent.
   (Baseline: 87 percent in 1998, NDHS)
3. Increase the coverage of Vitamin A supplementation among children 12 to 59 months old (1 to 4 years old) to 100 percent.
   (Baseline: 90 percent in 1998, FETP Survey)
4. Increase the coverage of Vitamin A supplementation among children with measles and severe pneumonia to 100 percent.
   (Baseline data is established in 2000)

VACCINE-PREVENTABLE DISEASES

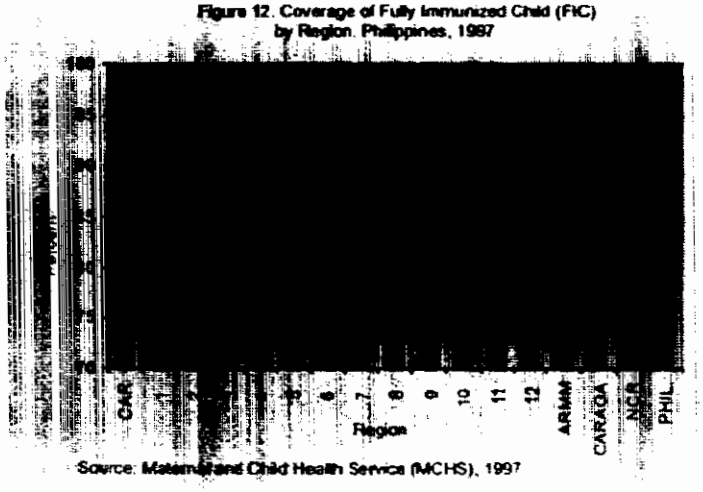
Immunization is one of the most cost-effective and successful interventions in reducing child mortality and morbidity. Before the immunization era, diseases such as poliomyelitis, diphtheria, measles and smallpox occur in epidemic proportion, killing thousands of Filipinos. The universal immunization against common childhood diseases like tuberculosis, measles, pertussis, diphtheria, tetanus, poliomyelitis and hepatitis B has come close to eradicating some of these diseases.

Smallpox has been declared eradicated globally. Polio eradication and measles elimination have been achieved in the Americas. In the Philippines, there is strong evidence of polio eradication. Efforts are being done so that the country can be certified polio-free in 2000 together with the other countries of the Western Pacific region. Among the vaccine-preventable diseases, measles and tuberculosis remain as major public health problems.

The impact of these diseases on child survival stems from four principal factors: low levels of immunization, young age at infection, presence of malnutrition and other complicating diseases, and lack of available health care. Contributing factors include crowded living conditions that give early exposure to the harsh environment. These diseases are preventable if early immunizations are given, and curable if early treatment and referral are done.

In 1993, the Philippines achieved its highest level of coverage for fully immunized child (FIC) at 91 percent. This has declined to 86 percent in 1995, possibly as a result of the devolution of health services to LGUs. The coverage for FIC improved to 90 percent coverage in 1996 and 1997. Maintaining high immunization coverage is crucial in the eradication of these vaccine-preventable diseases.

Figure 12. Coverage of Fully Immunized Child (FIC) by Region, Philippines, 1997

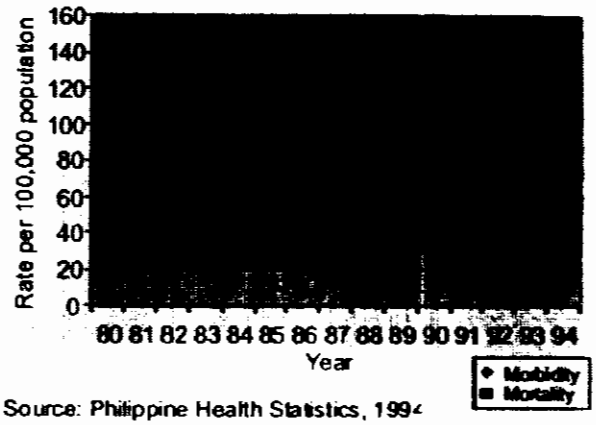


Source: Maternal and Child Health Service (MCHS), 1997

MEASLES

Measles is a viral infection that causes more child deaths than all of the other vaccine-preventable diseases combined. The disease is characterized by generalized blotchy rash lasting for three or more days, fever, cough, runny nose and red eyes. Transmission is through droplet spread or direct contact with the nasal, throat or urine secretions of infected persons. The most common complications of measles are pneumonia, diarrhea, blindness, malnutrition and otitis media that may lead to deafness.

Figure 13. Trends of Measles Morbidity and Mortality Philippines, 1980-1994



Source: Philippine Health Statistics, 1994

The disease is highly communicable, and all persons are susceptible with 80 percent attack rate among the unvaccinated. Outbreaks are expected every two to three years even if immunization levels are high due to accumulation of susceptibles and vaccine efficacy (85 percent efficacious if given to children starting at nine months old). Outbreaks are more explosive in rural areas and affecting a wider age range (1–14 years old) with higher death rates.

Measles is still among the 10 leading causes of illness in the Philippines. Reported measles cases in 1997 showed a threefold increase compared to 1996 and a fivefold increase compared to 1995. Most measles cases are among children aged 1–4 years and unvaccinated. The death rate from measles has declined in the past ten years. The case fatality ratio has also fallen but is highest among infants.

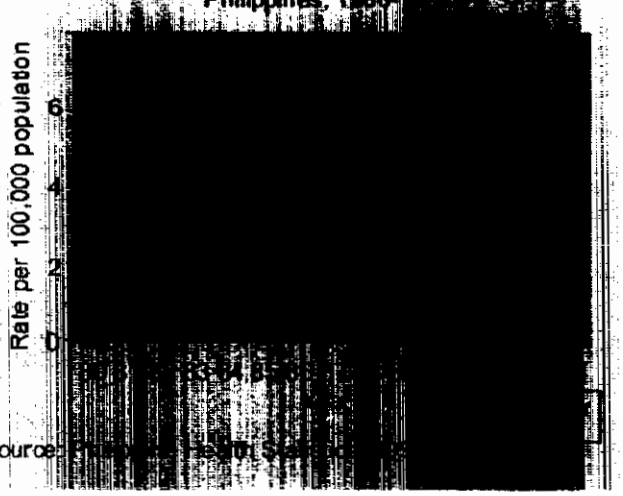
The Philippines decided to conduct a nationwide measles elimination campaign in 1998 to provide one supplementary dose of measles vaccine to all children aged nine months to 14 years. The campaign is targeting more than 27 million children as the first step to eliminate measles in the Philippines by 2008.

TETANUS

Tetanus is a highly fatal infection caused by the toxin of the tetanus bacillus, *Clostridium tetani*. The organism exists harmlessly in the gut of many animals and humans. It is only when the bacillus enters through the skin or open wound that it becomes fatal. The usual mode of transmission is through exposure to the soil where excreted tetanus spores can remain intact for years. People of all ages are susceptible to tetanus infection, especially those who live in rural areas where contact with animal excreta is more likely and in unsanitary conditions under which the tetanus bacillus thrives.

Neonatal tetanus, a tetanus infection occurring in the first month of life accounts for the greatest number of deaths from this disease. It results primarily from unsanitary practices surrounding birth such as, unhygienic cutting of the umbilical cord and improper handling of cord stump, especially when treated with contaminated substance.

Figure 14. Trends of Tetanus Morbidity and Mortality
Philippines, 1980-[illegible]



Source: [illegible]

The true magnitude of neonatal tetanus mortality is uncertain. Deaths among newborn infants that are unreported are relatively higher than among the other age groups. The number of reported cases of tetanus and neonatal tetanus has gone down since 1980.

Neonatal tetanus is considered eliminated as a public health problem (i.e., morbidity of less than one per 1,000 livebirths) in all provinces in the Philippines, except Cagayan and Maguindanao. The neonatal tetanus rate in the country is 0.16 cases per 1,000 livebirths. ARMM and Region 5 have the most number of reported cases. There are 338 cases and 127 deaths due to neonatal tetanus reported in 1996.

DIPHTHERIA

Diphtheria is a bacterial infection caused by *Corynebacterium diphtheriae* transmitted person to person through close physical contact and through respiratory droplets from the nasal and throat discharge of a case or carrier. Like other respiratory infections, transmission is higher in overcrowded and poor socioeconomic conditions.

Morbidity and mortality trends for diphtheria have fallen drastically since the last 15 years. In 1993, there were 867 diphtheria cases reported or a morbidity rate of 1.3 cases per 100,000 population. This declined further to just 53 cases reported in 1996.

PERTUSSIS

Pertussis or whooping cough is a bacterial respiratory infection caused by *Bordetella pertussis*. It causes a severe cough that lasts several weeks. The cough has a characteristic whoop, often with cyanosis and vomiting. In young infants the cough may be absent and the disease may manifest with spells of apnea. It is primarily transmitted by direct contact with discharges from the respiratory tract of infected persons; by airborne droplets or by indirect contact through articles freshly soiled with discharges of infected persons.

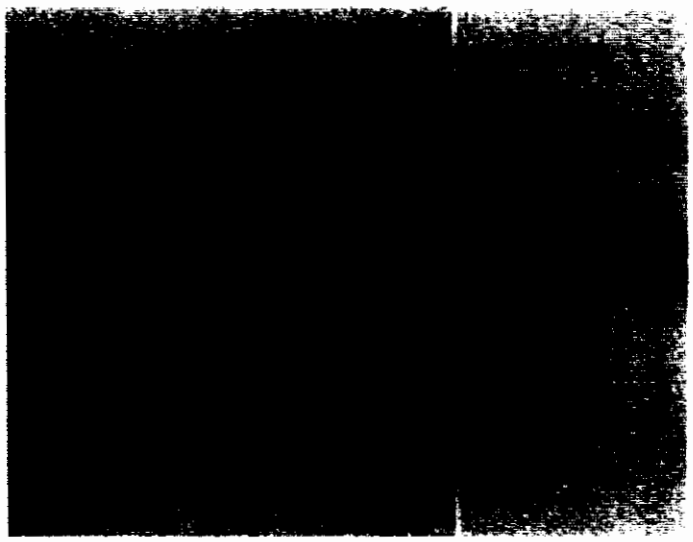
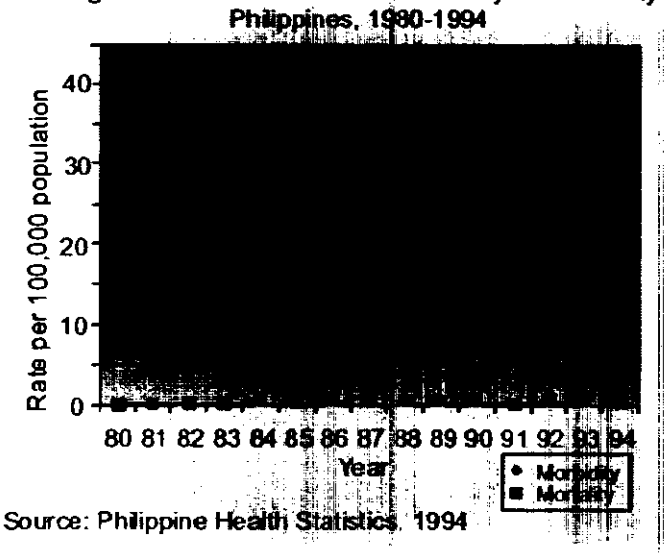


Figure 16. Trends of Pertussis Morbidity and Mortality Philippines, 1980-1994



Source: Philippine Health Statistics, 1994

Like diphtheria, pertussis cases and deaths have declined drastically in the last 15 years. Pertussis morbidity rate declined from 8.4 cases per 100,000 population in 1993 to 1.4 cases per 100,000 population in 1997. Less than 10 deaths a year have been recorded since 1990.

TUBERCULOSIS

Tuberculosis is one of the leading causes of morbidity and mortality in the country, but the true scope of the disease among children is unknown. It is caused by *Mycobacterium tuberculosis* and is transmitted by droplet infection through inhalation of bacilli from patients, or by inhalation of dust containing bacilli that have dried on the ground surface and become suspended in the air.

The risk of developing the disease is highest in children under three years old. An infected infant has a 10 percent chance of developing the disease in later childhood or in adulthood. Most tuberculosis infections are silent. Only between 1 percent to 2 percent of those harboring the bacillus develop outward symptoms each year. Without treatment, the bacillus may persist in the lungs of the victim indefinitely, ready to cause infection later in life. Most child deaths result from a severe form of the disease known as TB meningitis, which develops when infection spreads to the layers surrounding the brain.

Although BCG is the most widely used vaccine, there is no reliable marker of protection against tuberculosis. Data showing that BCG protects against TB meningitis and miliary TB (75-86 percent protection) have led to the hypothesis that BCG protects against blood-borne dissemination but not against pulmonary infection. BCG vaccine given at birth, however, will reduce morbidity and mortality from TB among children.

POLIOMYELITIS

Poliomyelitis is an acute viral infection spread via the fecal-oral route. Thus, transmission is higher in areas with poor sanitation. Where sanitation is good, pharyngeal spread becomes more important. The majority of wild poliovirus is asymptomatic. The risk of paralysis is approximately 1.0 in 200 infection among children less than one year old and 1.0 in 100 infection among children aged 1–14 years old.

A crucial component of the eradication effort is surveillance for acute flaccid paralysis (AFP), with or without fever, in any patient below 15 years. The overall quality of AFP surveillance has steadily improved since 1997. There is strong evidence of poliovirus eradication in the Philippines. The last

wild poliovirus was isolated in May 1993. No case of poliomyelitis was reported since 1997.

HEPATITIS B

The hepatitis B virus (HBV) causes Hepatitis B. In developing countries like the Philippines, the main routes of infection are perinatal transmission from a carrier mother to her baby and direct transmission between young children. In industrialized countries, the main routes of transmission are sexual intercourse and blood-to-blood contact (e.g., transfusion, needle sharing among intravenous drug users and mother to baby).

Acute infection may be subclinical, especially in infants and young children, or may show with malaise, nausea and jaundice. The main public health consequences of HBV infection are the chronic liver disease and liver cancer that arise in carriers. The younger the age at infection, the higher the chance of becoming a carrier.

Reports gathered from FETP surveillance showed increasing cases of Hepatitis B. Most Filipinos are infected before the age of six years but most active cases are within the age group of 20–49 years. As many as 95 percent of infected infants but only around 10 percent of adults become long-term carriers. Approximately 12 percent of Filipinos are chronic carriers. Children should be vaccinated as early as possible to avoid becoming carriers.

Goals: Poliomyelitis is eradicated and the Philippines is declared [illegible]
Measles, tetanus, diphtheria and pertussis are eliminated as [illegible]
Morbidity, mortality and complications from tuberculosis and [illegible]

National Objectives for Health by 2004

Health Status Objectives

1. Eradicate poliomyelitis and declare the Philippines as polio-free.
   (Poliomyelitis is considered eradicated if zero wild poliovirus is reported for at least three consecutive years with good quality surveillance.)
   (Baseline: 0 wild poliovirus since 1993, NESSS)
2. Reduce measles cases to less than 3,000.
   (Baseline: 12,228 cases in 1996, NESSS)
3. Reduce neonatal tetanus to less than one case per 1,000 live births in all provinces, cities and municipalities.
   (Baseline: Two provinces still with more than one case per 1,000 live births in 1997, NESSS)
4. Reduce diphtheria cases to less than 300.
   (Baseline: 1,053 cases in 1994, PHS)
5. Reduce pertussis cases to less than 1,500.
   (Baseline: 5,900 cases in 1994, PHS)

Risk Reduction Objectives

1. Increase the coverage of infants who are fully immunized before the first birthday to 95 percent.
   (Baseline: 90 percent in 1997, FHSIS)
2. Increase special target population coverage of infants immunized against Hepatitis B to 95 percent.
   (Baseline: 36.5 percent in 1997, FHSIS)

Services and Protection Objectives

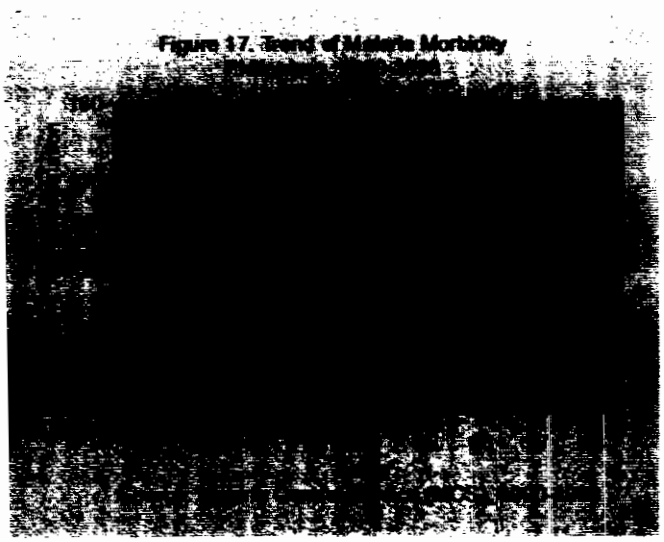
1. Increase the percentage of government health facilities providing immunization and other child health care services to 90 percent
   (Baseline data is established in 2000)
2. Conduct mass immunization campaign for :
   a. Neonatal tetanus elimination: Conduct mass immunization of women 15 to 44 years old with maximum of five doses of tetanus toxoid (TT)
   b. Measles elimination: Conduct mass immunization for children under five years old
3. Intensify quality surveillance through AFP reporting rate of 1 per100,000 under 15 years old population.
   Note: Good quality Acute Flaccid Paralysis (AFP) surveillance includes the following:
   - *Non polio AFP rate of 1 per 100,000 population below 15 years*
   - *At least 80 percent adequate stool specimen collection*
   - *At least 80 percent reported AFP cases investigated on time (within 48 hours)*
   - *At least 80 percent of AFP cases are followed-up after 60 days*
4. Establish laboratory surveillance for measles.
   (Baseline: 0 in 1998, MCHS)

MALARIA

Malaria is a disease caused by protozoa of the genus *Plasmodium*. Four species of the malaria parasite are known to infect humans: *Plasmodium vivax*, *Plasmodium falciparum*, *Plasmodium malariae* and *Plasmodium ovale*. The disease is transmitted to humans by inoculation of the infective sporozoites through the bite of a female *Anopheles* mosquito at night. The sporozoites are carried in the blood circulation into the liver where they develop into merozoites.

The merozoites invade the red blood cells. The periodic destruction of red blood cells during the process and the release of parasites into the circulation to re-invade other red blood cells cause typical intermittent chills, fever and sweating associated with malaria. Some merozoites further develop into male and female gametocytes that are sucked in by the female *Anopheles* mosquito during a blood meal. In the mosquito, they undergo sexual development, giving rise to sporozoites, and the cycle is repeated.

Disease transmission is perennial and generally higher during the rainy season than the dry season. In the Philippines, the main mosquito vector is the *Anopheles flavirostris* and around 70 percent of cases are caused by *P. falciparum*. Endemic areas are usually rural, hilly or mountainous, and hard to reach.



People at risk in endemic areas are around 10.8 million. High-risk groups are upland subsistence farmers, forest-related workers, indigenous peoples, and settlers in frontier areas, migrant agricultural workers and soldiers assigned in endemic areas.

Malaria is still one of the 10 leading causes of morbidity in the country although it is no longer a leading cause of death. For the past years a reduction in the morbidity rate has been observed from 123 cases per 100,000 population in 1990 to 73 cases per 100,000 population in 1998. The mortality rate also fell from 1.5 deaths per 100,000 population in 1990 to 0.9 deaths per 100,000 population in 1995. Deaths are mainly due to delay in seeking treatment,

misdiagnosis and inappropriate case management.

Provinces have been categorized according to the number and trend of cases. Most cases and deaths (78 percent of cases from 1992 to 1996 and 88 percent of cases in 1997; and 67 percent of deaths from 1989 to 1993) came from the 22 Category A provinces (highly endemic). Eleven percent of cases from 1992 to 1996 came from the 25 Category B provinces (moderately endemic) while less than 1 percent of cases for the same period was noted in the 18 Category C provinces (low endemic).

Figure 19. Malaria Endemic Provinces Philippines, 1996

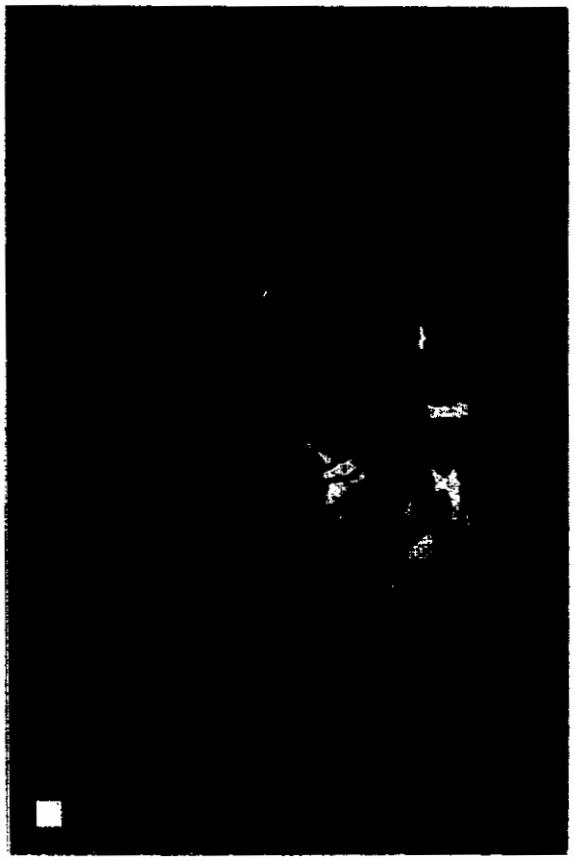
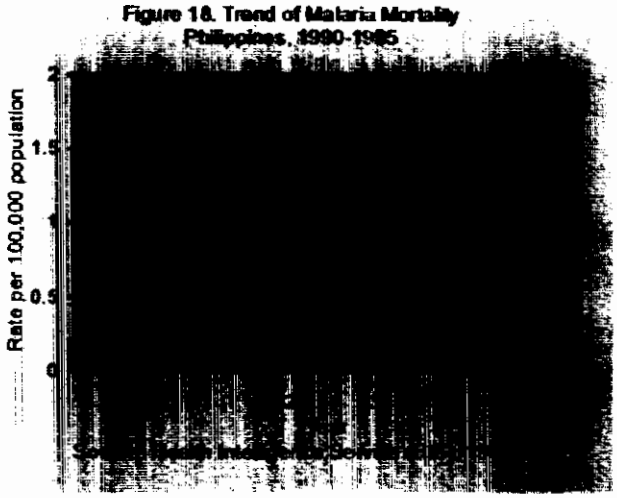


Figure 18. Trend of Malaria Mortality Philippines, 1990-1995



Thirteen provinces have been declared malaria-free (Category D provinces). A province is considered malaria-free when there is no indigenous case in the area for at least three consecutive years.

Under the Malaria Control Program, several preventive and control measures are carried out. One of the major strategies is early diagnosis and treatment. Early diagnosis is by clinical or by blood smear examination. For treatment, chloroquine, sulfadoxine-pyrimethamine and quinine are the first, second and third line drugs, respectively. To prevent further transmission and relapse, primaquine is given. Resistance to chloroquine is widespread but low grade (RI) so it is still given as the first line drug. This strategy aims not only to reduce morbidity but also to prevent complications and deaths due to malaria.

The use of mosquito nets treated with insecticide is also considered a major preventive measure. On the average, 65 percent of households in endemic areas have at least one mosquito net, but among indigenous cultural communities and in areas where extreme poverty exists, ownership is almost zero. Another strategy is selective

application of indoor house spraying to control the *Anopheles* mosquito, which is sensitive to currently available insecticides.

The DOH oversees the Malaria Control Program in partnership with LGUs, NGOs and communities at risk. The multi-sectoral collaboration has been successful in controlling malaria in the Bicol region and Bataan province. There are 824 permanent and 570 casual personnel nationwide that carry out control activities. The vast network of RHUs and hospital staff is also involved. Scarce resources, inadequate training of field personnel and poor community participation are the major constraints in effectively carrying out the program.

Goal: Malaria is eliminated as a public health problem in all endemic provinces.

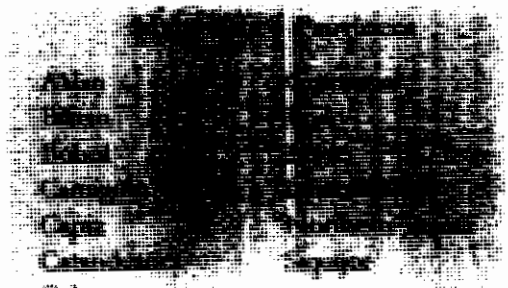
National Objectives for Health by 2004

Health Status Objectives

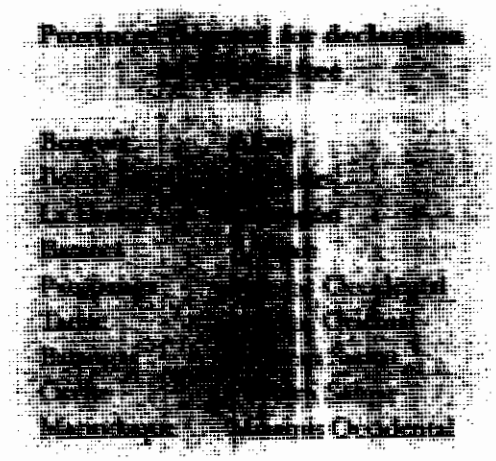
1. Reduce malaria morbidity rate to 24 cases per 100,000 population.
   (Baseline: 59 cases per 100,000 population in 1997, Malaria Control Service [MCS])

Special Target Areas	1998 Baseline (Rate per 100,000 Population)	2004 Targets
Apayao	6,176	2,470
Tawi-tawi	1,483	593
Agusan del Sur	995	398
Kalinga	835	334
Agusan del Norte	805	322
[illegible]	763	305
[illegible]	[illegible]	216
[illegible] Norte	[illegible]	129
[illegible] Oriental	[illegible]	87
[illegible] del Sur	73	29

2. Reduce malaria mortality rate to 0.45 deaths per 100,000 population.
   (Baseline: 0.90 deaths per 100,000 population in 1995, PHS)
3. Prevent the recurrence of transmission in malaria-free provinces.
   (A province is considered malaria-free when there is no reported indigenous case for three consecutive years.)
   (Baseline: 13 provinces have been declared malaria-free as of 1997, MCS)



4. Declare 18 other provinces malaria-free (including the entire Visayas).



Risk Reduction Objectives

1. Increase the household utilization of mosquito nets every night.
   (Baseline data is established in 2000)
2. Increase the compliance rate on malaria treatment.
   (Baseline data is established in 2000)
3. Increase the coverage of streams that serve as breeding site seeded with larvivorous fish to 50 percent.
   (Baseline data for validation by MCS)
4. Increase the coverage of streams that serve as breeding site cleared quarterly to 25 percent.
   (Baseline data for validation by MCS)

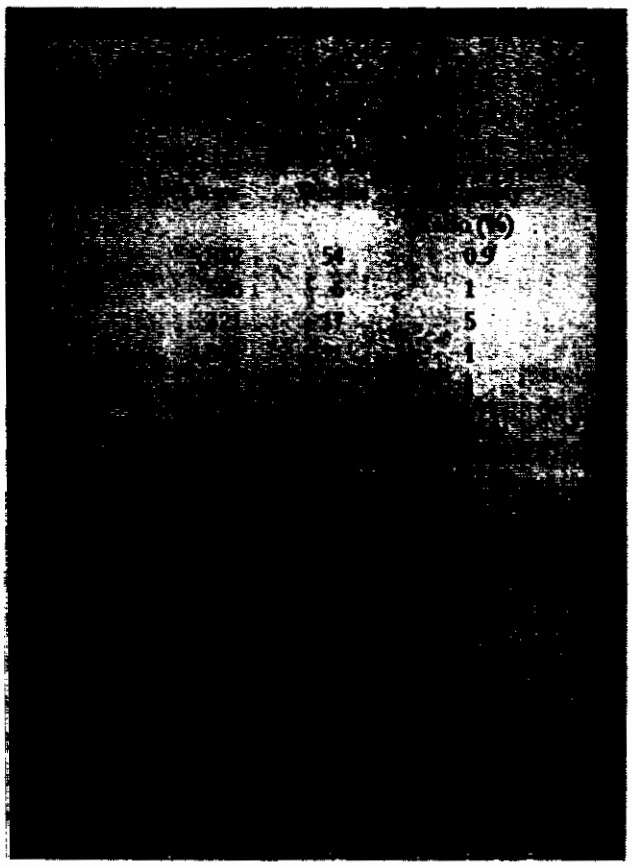
Services and Protection Objectives

1. Sustain the coverage of blood smear examination of clinically diagnosed cases at 100 percent.
   (The number of clinically diagnosed malaria cases is equivalent to the five-year average number of confirmed cases times five.)
   (Baseline: 100 percent in 1997, MCS)
2. Sustain the coverage of treatment of clinically diagnosed and confirmed cases at 100 percent.
   (Baseline: 100 percent in 1997, MCS)
3. Provide at least one mosquito net to 100 percent of households without mosquito net in indigenous communities and at least one mosquito net to 60 percent of households without mosquito net in all other endemic areas.
   (Baseline data for validation by MCS)
4. Increase the percentage of mosquito nets treated with insecticide twice a year in malarious A barangays in Category A provinces and in all endemic barangays in Category B and C provinces to 100 percent.
   (Baseline: 55 percent in 1997, MCS)
5. Increase the coverage of houses sprayed once a year in malarious B barangays in Category A provinces to 90 percent.
   (Baseline: 46 percent in 1997, MCS)

DENGUE

Dengue fever and the more severe form, dengue hemorrhagic fever, are caused by any of the four sero types of dengue virus (types 1, 2, 3, and 4). An infected day-biting female *Aedes* mosquito transmits this viral disease to humans. In the Philippines, *Aedes aegypti* and *Aedes albopictus* are the primary and secondary mosquito vectors, respectively. The mosquito vectors breed in small collections of water such as storage tanks, cisterns, flower vases, and backyard litter.

Dengue manifests initially with fever and other non-specific symptoms that may progress to severe manifestations like bleeding, circulatory failure and shock. The disease is self-limiting, but prognosis is guarded. There is no known treatment for dengue. Case management is limited to supportive therapy like intravenous fluids and paracetamol. Factors that favor the spread of the disease are: poor environmental sanitation, water stored within the house or standing water in the premises, high population density or overcrowding.

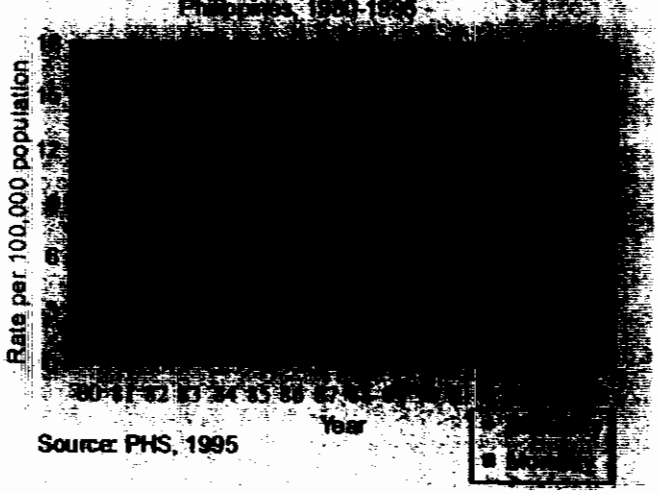


The disease affects all ages but almost all cases are among children 0–15 years old. Both sexes are equally affected. Cases are more frequent during the rainy season, and the incidence is higher in urban communities. The surveillance sentinel sites have reported a higher number of cases in NCR, Regions 3, 8 and 7 than the rest of the country in 1998.

Dengue became a notifiable disease in 1958. Since then, cases have been reported to occur sporadically in urban centers and steadily increased to a point when it is now an endemic disease in all provinces and cities in the country. In recent years, more epidemics have been reported in urban centers. However, rural areas are not spared. There is a trend of increase in cases every 3–5 years, although in Metro Manila, cases seem to increase every other year. In spite of the in-

creasing trend in morbidity, the case fatality rate has been maintained to a steady low ranging from 0.1 percent to 5 percent.

Figure 20. Dengue Morbidity and Mortality Rates, Philippines, 1990-1995



Source: PHS, 1995

In response to the situation, the DOH initiated the National Dengue Prevention and Control Program in 1993 as a pilot project in Region 7 and NCR. With the experience and expertise gained in the pilot areas, nationwide implementation of the program was started in 1998. Although in its infancy, the program is gaining public interest and concern.

The program aims to reduce morbidity and mortality from dengue infection by preventing the transmission of the virus from the mosquito vector to humans. The strategy is based on health education and advocacy; removing mosquito-breeding places through sanitation within the household, in school and in public places; and disease surveillance and epidemic management.

To strengthen program implementation, there is a need for more funding support to small projects at the local level and for field implementors with technical skills on dengue prevention and control.

Goal: Morbidity and mortality from dengue infection are reduced

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the incidence rate of dengue hemorrhagic fever to 20 cases per 100,000 population.
   (Baseline: 32 cases per 100,000 population in 1994, HIS)
2. Reduce the case fatality rate of dengue hemorrhagic fever to less than 1 percent.
   (Baseline: 2 percent in 1998, NESSS)
3. Decrease the number of dengue outbreaks to less than 10 a year.
   (Baseline: 12 outbreaks recorded in 1998, FETP)

Risk Reduction Objectives

1. Reduce the risk of human exposure to Aedes mosquito bite by:
   a. Maintaining the number of houses positive for Aedes larvae to less than five per 100 houses (WHO Standard: House Index of <5)

b. Maintaining the number of containers positive for Aedes larvae to less than 20 per 100 houses (WHO Standard: Breteau Index of <20)

2. Increase the percentage of household respondents practicing removal of mosquito breeding places to 80 percent.
   (Baseline: 66 percent in 1998, NDHS)
3. Increase the level of awareness on dengue fever and dengue hemorrhagic fever to 100 percent.
   (Baseline: 91 percent in 1998, NDHS)

Services and Protection Objectives

1. Establish a Dengue Reference Laboratory capable of performing IgM capture ELISA for dengue surveillance in three regions of the country.
   (Baseline: Only the Bureau of Research and Laboratories (BRL) has capability; 0 in other regions in 1998, CDCS)
2. Increase the percentage of primary and secondary government hospitals with laboratory technologists capable of platelet count and hematocrit determination to 80 percent.
   (Baseline: 77 percent in RHO 7 in 1998, BRL)
3. Ensure surveillance and investigation of all reported dengue epidemics in the country.
   (Baseline: 12 outbreaks investigated by Epidemiology and Surveillance Units in 1998, FETP)

FILARIASIS

Filariasis is a parasitic infection transmitted by a mosquito. Two species of the parasite that cause filariasis exist in the Philippines: *Wuchereria bancrofti* and *Brugia malayi*. Several mosquito vectors that include *Aedes*, *Anopheles*, and *Mansonia* species transmit the disease to humans.

The infection starts when a mosquito bites a person and transmits the larvae that are carried into the blood circulation. Once they are lodged in the lymph vessels and lymph glands, the larvae develop into adult male and female worms. After copulation, the adult females produce millions of microfilariae that circulate in the blood stream where they may be sucked by a mosquito vector during a blood meal. The microfilariae develop into larvae within the mosquito. When the mosquito bites another person the cycle is repeated.

The microfilariae live for two years in the body, causing periodic filarial fever attacks and other manifestations. The adult worms live for 10 years and when they die granulomas form around them in the lymphatic channels. This blocks the flow of lymph, causing the gross and irreversible chronic deformity of elephantiasis and hydrocoeles, which the disease is known for. More affected are the males and the working age group due to work exposure in abaca fields where mosquito vectors breed.

Although filariasis is not a killer disease, it is considered the second leading cause of permanent, long-term disability among infectious diseases. With recent progress in the detection and cure of filariasis, the WHO has identified it as one of the eradicable diseases and has called for its global elimination as a priority.

The diagnosis of filariasis is confirmed by the demonstration of microfilariae in a blood smear examination conducted at night due to the nocturnal periodicity of the parasite. Personal protective measures against the mosquito vector include the use of mosquito nets, residual spraying, screening of houses, use of protective clothing among plantation workers, and elimination of mosquito breeding places. However, mass treatment with diethylcarbamazine (DEC) in endemic localities remains the strategy of choice to eliminate the disease.

In the Philippines, filariasis endemicity is categorized into three. Category 1 includes 20 provinces in Regions 5, 8, 11, 4 and 9 with reports within the past 10 years establishing its endemicity. Category 2 includes 25 provinces with no recent report of endemicity but were reported as endemic in the 1960 prevalence survey. Category 3 includes 33 provinces without any report of endemicity and considered as non-endemic for the disease. To date, 45 out of 78 provinces are endemic for filariasis.

In 1998, the national prevalence rate for filariasis is 9.7 cases per 1,000 population. The rate may reflect the limited resources and field reports rather than the actual situation of the disease. Recent discoveries of new endemic areas reveal some of the country's highest recorded rates: 13.6 percent in Marinduque in 1992 and 17.7 percent in Cagayan de Oro City in 1998. This indicates that the reservoir has substantially built up unabated over the years.

The control of the disease started in the Philippines in 1963 with the establishment of the National Filariasis Control Program. Three Filaria Control Units based in Regions 5, 8 and 11 are carrying out the program at the field level. Originally set up to handle the prevention and control activities for the three major island groups (Luzon, Visayas and Mindanao), several events affecting the DOH organizational structure confined their activities to the respective regions where they are based. This set-up limited filaria control activities in the country.

Figure 21. Filariasis Endemic Provinces Philippines, 1998

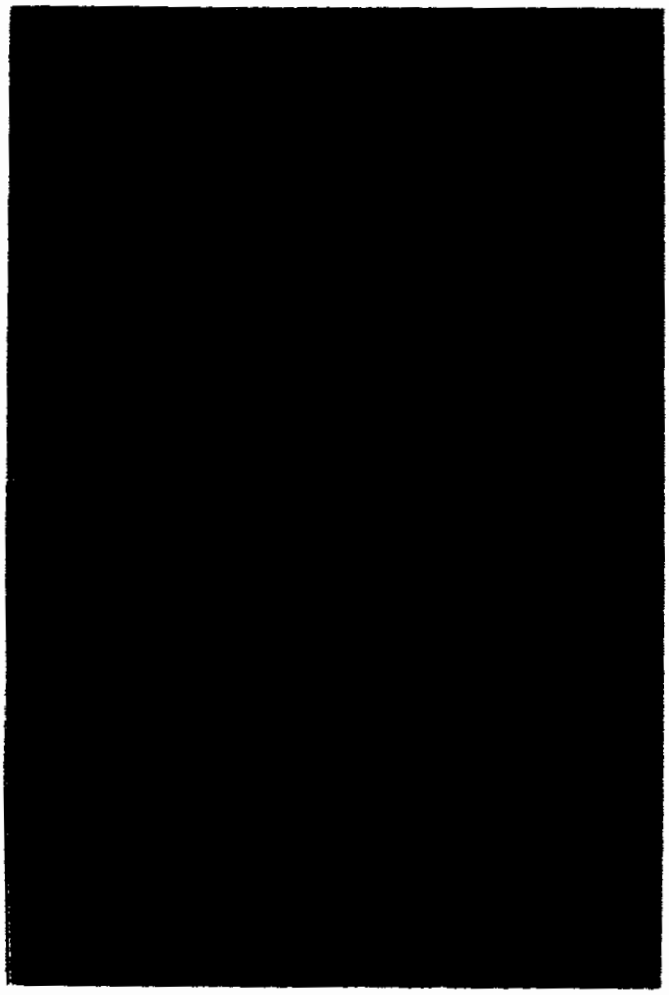
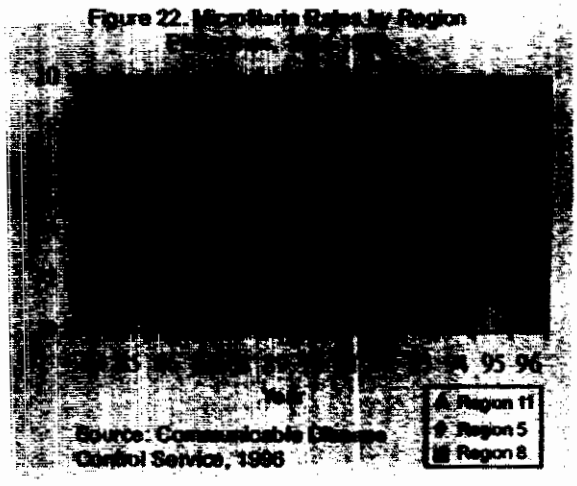


Figure 22. Microfilaria Rates by Region



In line with the WHO's global call, the program is shifting its thrust toward elimination of filariasis as a public health problem. Preparatory activities on the National Filariasis Elimination Program started in 1998. The national strategy for the elimination of the disease is based on mass treatment for all endemic municipalities scheduled to start in 2000.

Goal: Filariasis is eliminated as a public health problem.

(Filariasis is considered eliminated as a public health problem if the prevalence rate is less than one per thousand population.)

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the microfilaria prevalence rate to less than one case per 1,000 population in endemic municipalities.
   (Baseline: 9.7 cases per 1,000 population in 1998, Filariasis in the Philippines –A Compilation of DOH Data, 1960 to 1998, CDCS)
2. Reduce microfilaria density in endemic municipalities to four microfilariae per positive case.
   (Baseline: 40 microfilariae per positive case in 1998, Cagayan de Oro Survey, CDCS)
3. Reduce adenolymphangitis attacks to one per year.
   (Baseline: 3-4 per year in 1994, Global Rate)

Risk Reduction Objectives

1. Increase the percentage of the population in endemic municipalities submitting to annual mass treatment (for four consecutive years) to 80 percent.
   (Baseline data is established in 2000)
2. Increase the enrollment of chronic cases in support or care groups to 30 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

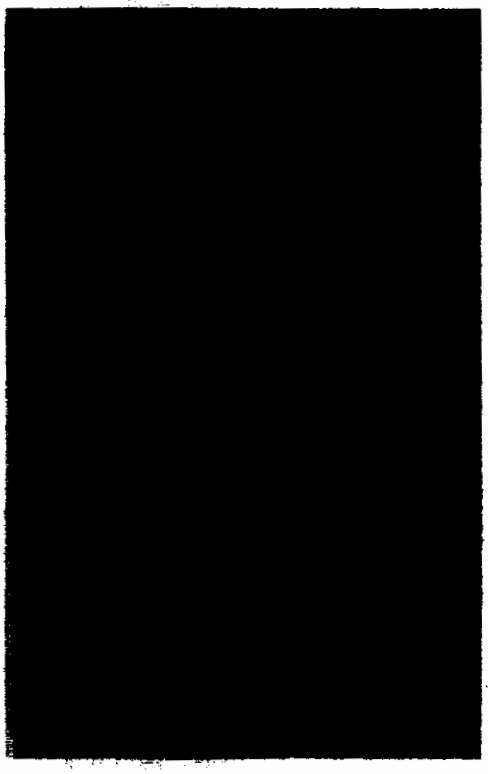
1. Identify all endemic municipalities in the country.
   (Baseline: 117 endemic municipalities, 1998 Filariasis in the Philippines, CDCS)
2. Conduct annual Filaria Health Fair for four consecutive years in all endemic municipalities.
   (Baseline data is established in 2000)
3. Issue National Certificate of Filaria Elimination to all municipalities completing four years of mass treatment and achieving a microfilaria prevalence rate of less than one case per 1,000 population.
   (Baseline data is established in 2000)

SCHISTOSOMIASIS

Schistosomiasis is a tropical parasitic disease caused by a blood fluke known as *Schistosoma japonicum*. It is transmitted through an intermediary host, a tiny freshwater snail identified as *Oncomelania hupensis quadrasi*. The disease affects not only humans but animals as well, like dogs, carabaos, cows and pigs. Man contributes 75 percent in the transmission of the disease while 25 percent is attributed to animals.

The disease is transmitted to man or animal when they come in contact with bodies of freshwater infested with cercariae coming from infected snails. The cercariae penetrate the skin of the host, find their way into the blood circulation, then to the liver and into their final habitat - the mesenteric veins in the wall of the intestines where they become adult male and female flukes. The flukes copulate and lay eggs. Through minute ulcers or sores in the intestinal walls, the eggs get inside the gut and are passed out in the feces. Once they reach water, the egg hatch into miracidia which will now seek the snail, thus repeating the cycle.

Figure 23. Schistosomiasis Endemic Provinces, Philippines, 1996



The approaches to prevention and control are four-fold and based on the life cycle of the parasite. They are intended to break the weak links in the cycle through treatment of cases, environmental sanitation, snail control and health education.

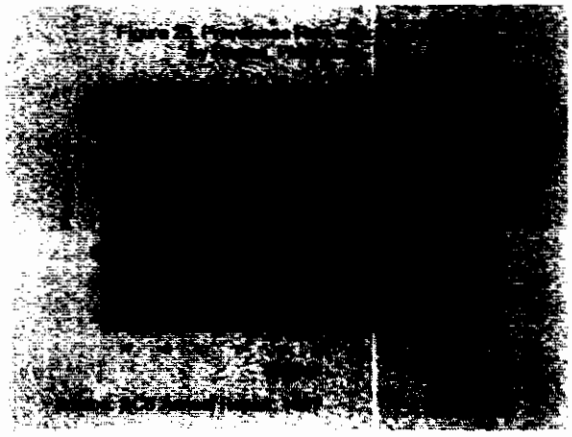
The endemic areas in the Philippines are distributed in 10 regions, affecting 24 provinces, 183 municipalities, and 1,212 barangays with a total population at risk of 6.7 million, of which 1.8 million individuals are directly exposed to the disease. There are 3,391 positive snail colonies in the endemic barangays covering approximately 11,250 hectares. Rainfall patterns have a bearing on the endemicity of the disease. Areas with rainfall throughout the year and have no distinct dry season (types 2 and 4 of PAGASA classification) are associated with the basic requirements for survival of the amphibious snail intermediate host.

Infection in human is related to age, sex and occupation. At childhood, there is no significant difference between males and females, but after the age of 14, the overall rates become slightly higher in males due to their exposure in the field. The highest intensity of infection occurs among the 5 to 15 years age group. Infection during childhood builds up rapidly until it reaches its peak among the 20 to 24 years age group. Thereafter, a downward trend follows.

The significance of schistosomiasis is that its primary victims are the rural poor. Farmers and freshwater fishermen make up the occupational groups with the highest prevalence of the disease since they have frequent contact with infested water. Their sources of livelihood and work areas are the foci of disease transmission. The disease hinders the productivity, income and upward socioeconomic mobility of this poor sector.

The disease had a prevalence rate of 7.5 percent in 1989. In 1990, the Philippine Health Development Project (PHDP) enabled the Schistosomiasis Control Program to expand the target to 95 percent case finding and 100 percent treatment coverage. This resulted in the reduction of the prevalence rate to 3.9 percent in 1993, the lowest ever achieved by the program. In 1994, with the end of PHDP support, the prevalence rate went up to 5.4 percent. Since then, it has gone down slowly to 4.5 percent in 1997.

A 1997 report classified three provinces as highly endemic, with Maguindanao having the highest prevalence rate of 18.91 percent, followed by Agusan del Sur and Lanao del Norte. Two provinces, Surigao del Norte and Oriental Mindoro, are classified as moderately endemic. Nineteen provinces have low endemicity. Bohol is at the point of eradication with the lowest prevalence rate of 0.17 percent. Among the 10 endemic regions, only ARMM is classified as highly endemic with a prevalence rate of 12.8 percent.



Access to safe water supply is also one of the people's primary needs in rural areas where schistosomiasis is endemic. There is also a need to build sanitary toilet facilities that can reduce the prevalence of the disease. Records show that around 25 percent of households have no access to safe water while around 40 percent of households have no sanitary toilet facilities in endemic areas.

Interventions in treatment, environmental sanitation, snail control and other preventive actions require that planning and implementation of activities be made with LGUs, NGOs, other GOs, and the community. This will draw up multi-sectoral support for projects such as regular clearing of vegetation, drainage, provision of safe source of water supply and water-sealed toilets, construction of footbridges, and agro-engineering measures that will cut down disease transmission.

Goal: Schistosomiasis is eliminated as a public health problem in all endemic provinces.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the national prevalence rate of schistosomiasis to 2.5 percent.
   (Baseline: 4.5 percent in 1997, SCS)

Special Target	1997	2004
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	18.91%	10.06%
[illegible]	18.29%	9.71%
[illegible]	11.06%	5.88%
[illegible]	8.95%	4.76%
[illegible]	[illegible]	2.88%

2. Eliminate schistosomiasis as a public health problem in five endemic provinces.
   (Schistosomiasis is considered eliminated as a public health problem if the prevalence rate is maintained at less 1.0 percent for at least five consecutive years.)
   (Baseline: < 1.0 percent in 1997, SCS)

Special Target Areas	1997 Baseline	2004 Targets
Davao Oriental	0.99%	0.47%
Surigao del Sur	0.90%	0.43%
Zamboanga del Norte	[illegible]	0.21%
Davao del Sur	0.38%	0.18%
Bohol	0.17%	0.08%

Risk Reduction Objectives

1. Increase the level of awareness on schistosomiasis among the population in endemic areas.
   (Baseline: KAP Survey, 1990)

Knowledge and Awareness	1990 Baseline	2004 Targets
Snail vector	68.4%	85%
Location of snail colonies	73.2%	91%
Signs and symptoms	88.5%	97%
Treatment	75.1%	98%

2. Increase the compliance rate on stool submission among exposed population in endemic areas to 62 percent.
   (Baseline: 49.88 percent in 1995, Balonga, L., Study on Stool Collection Rates in Leyte)
3. Conduct yearly mass treatment in the four provinces and two cities in CARAGA to cover all population ages five-year-old and above in all endemic barangays.
   (Baseline for CARAGA is established in 1999)

4. Increase the compliance rate on immediate treatment for those found positive for schistosomiasis to 50 percent.
(Baseline: 15.9 percent in 1988, Rona, A., KAP Survey on Stool Collection and Treatment)
5. Decrease the proportion of people practicing water contact activities in cercaria-infested bodies of water.

(Baseline: 1995, Cuayzon, A., Reinfection Rates among Schistosomiasis Patients Treated with Praziquantel in Areas of Varying Endemicity in Leyte)
6. Increase the proportion of people practicing protection against contact with cercaria-infested bodies of water.
(Baseline: National KAP Survey, 1990)

Services and Protection Objectives

1. Increase the coverage of case finding to 75 percent of eligible population.
(Baseline: 25 percent in 1997, SCS)
2. Increase the coverage of mass treatment to 80 percent of eligible population in barangays with prevalence rate of 10 percent and above.
(Baseline: 30 percent in 1997, SCS)
3. Increase the percentage of household with sanitary toilet facilities in endemic areas to 72 percent.
(Baseline: 60.35 percent in 1996, EHS)
4. Increase the percentage of household with access to safe water in endemic areas to 82 percent.
(Baseline: 75.5 percent in 1996, EHS)
5. Increase the coverage of footbridge construction (wooden/concrete) in cercaria-infested bodies of water frequented by people to 10 percent.
(Baseline: 3.5 percent in 1989, SCS-Foreign Assisted Projects)
6. Increase the total area of snail colonies subjected to snail control operation (through clearing and agro-engineering) to 5 percent.
(Baseline: 0.1 percent in 1997, SCS)

SOIL-TRANSMITTED HELMINTHIASES AND OTHER PARASITOSES

SOIL-TRANSMITTED HELMINTHIASES

The three major causes of intestinal parasitism in the Philippines are *Ascaris lumbricoides*, *Trichuris trichiura* and Hookworms (*Ancylostoma duodenale* and *Necator americanus*). These parasites are classified as soil-transmitted helminths (STH) because their major development happens in the soil, such that geofactors like temperature and humidity primarily determine its distribution. No intermediate host is necessary for the transmission of these parasites.

Intestinal parasites like ascaris live as long as five years, passing out as much as 240,000 eggs per worm per day. With unsanitary disposal of human stools, the eggs develop in the soil and can infect humans when fingers or food are contaminated with parasite eggs from the soil, or when the infective larva of hookworms in the soil penetrate the skin of barefoot individuals.

Soil-transmitted helminthiasis is the third most prevalent infection worldwide, second only to diarrheal diseases and tuberculosis, and is ranked 10th among the world's top 10 infectious disease killers. As much as one ton of parasite eggs a day is passed out in the soil worldwide. No wonder that the transmission of helminths from the soil persists in abundant proportions even to this day, especially in developing countries like the Philippines.

Soil-transmitted helminthiases are the number one most important disease burden among those five to 14 years old. This age group has the highest prevalence rate and the greatest source of transmission for the infection. It is also considered the number one health intervention priority in this age group because of the disease burden, and because mass deworming in this age group is a cost-effective intervention to dramatically bring down the prevalence in the community by as much as 70 percent.

The prevalence of soil-transmitted helminthiases among those two to five years old is lesser, but they suffer the greatest impact from the disease when they get infected. Malnutrition, anemia, stunted growth in height and body size, decreased physical activity, impaired mental development and school performance are among the extensive results of parasitism.

Based on various surveys, the prevalence of soil-transmitted helminthiases in the Philippines has persisted at high levels above 50 percent over the years. Mass deworming of children aged two to 14 years old at least twice a year for three consecutive years is required to immediately halt the impact of the disease on children and the community. Promotion of personal hygienic practices and environmental sanitation measures like toilet construction should be instituted as a long-term solution to prevent further transmission of the disease once deworming has brought it under control.

In response to this major health problem, the DOH began in 1998 developing a national program to prevent and control soil transmitted helminthiases. The program will be piloted initially in five provinces until it covers all provinces in the country.

OTHER PARASITOSES

Parasitism is one of the frequently ignored infections in the Philippines. In some communities, it is misconceived as a part of the child's normal development. Parasites have diverse habitats in the human body. Depending on the type, they can produce injury to some tissues or organs so that manifestations mimic those diseases caused by bacteria or other microbiologic agents. A number of parasitic infections continue to distress people. Parasitic infections like echinostomiasis, taeniasis, capillariasis and many others have not been fully mapped out in the country.

There are areas where only a certain parasite is endemic but not the others. In the Ilocos Region in Northern Luzon, echinostomiasis is more common as compared to taeniasis or heterophyiasis. This needs validation because studies to pinpoint endemic areas for these parasites are limited. In all these parasitic infections, the males in the productive age group are the ones most commonly affected. This is mainly attributed to the cooking and eating practices of the people.

Existing technology for the prevention and control of parasites are highly effective and reliable. Drugs like Praziquantel, a chemotherapeutic agent, is currently available for many of these parasitic agents. Health education remains an important support strategy. With adequate information, people may avoid consuming raw or insufficiently cooked foods which may contain the infective larvae. Programs to address these problems could greatly reduce parasitic infections even to near elimination levels in endemic areas.

There may still be other parasites present in the country and these perhaps may be discovered as the program for these parasitic infections becomes fully operational. The following parasitic infections are already known to exist in the Philippines.

Paragonimiasis

Paragonimiasis is a zoonotic parasitic disease caused by a group of flukes belonging to genus *Paragonimus*. The infection which often involves the lungs have manifestations similar to pulmonary tuberculosis (PTB). Chronic coughing productive of blood streaked sputum and chest pains are some of the signs and symptoms. It is frequently encountered in places where people eat raw or inadequately cooked crabs or possibly snails which harbor the infective stage of the parasite. A person may also be infected by eating insufficiently cooked meat of domesticated or wild animals, like pigs, dogs, rats, cats, among others that devour infected fresh water crabs. Endemic areas in the Philippines have not been fully established. Previous studies reported the

presence of the parasite in the following places: Sorsogon, Albay, Camarines Sur, Camarines Norte. Samar, Leyte, Cebu, Negros, Basilan and the provinces in Mindanao. In Sorsogon, the infection rate ranges between 16 - 25percent and 37 percent in Cateel, Davao Oriental. Other areas where pickled or brined crabs is a delicacy have not been investigated for the presence of this infection. Paragonimiasis may coexist with PTB but may also be misdiagnosed for it. A study in Sorsogon showed that this parasitic infection is misdiagnosed as PTB in 25 percent to 60 percent of subjects examined. Involvement of the brain due to migration of the worms may present as Jacksonian epilepsy, paralysis and paresis of varying degree and visual disturbances. Praziquantel is the treatment of choice for paragonimiasis. Bithionol can also be used.

Capillariasis

Capillariasis was first reported in Ilocos Norte in 1963. One hundred eight deaths from 1,800 cases were documented in the same area in 1967. More deaths may have been occurring but these were not parasitologically confirmed. In 1998 an investigation of an epidemic of a "mystery disease" in Compostela Valley in Bukidnon revealed *capillaria*. There are twice as many males than females affected. Most of the males affected are fishermen who usually eat their catch raw. History suggests ingestion of raw or inadequately cooked small fish, particularly *bagsit*, as the mode of transmission. Intestinal capillariasis is characterized by intestinal malabsorption, chronic diarrhea and borborygmi. The life cycle in man has not been fully understood. It is believed that the experimentally established life cycle of the parasite in lower animals like monkeys, migratory birds and fish may be the same as that occurring in man. Mebendazole or albendazole is effective for treatment. Incomplete treatment may result in relapse.

Echinostomiasis

The parasite *Echinostoma ilocanum*, was first described in the Philippines in 1907 by Garrison. Common in the Ilocos Region in Northern Luzon, this parasitic infection is also found in Leyte, Samar and the provinces in Central Luzon and Mindanao. An infected person may have diarrhea which is sometimes bloody and with associated abdominal pain. Endemicity is also related to the eating habits of the population. Prevalence rate is 5 percent. "Kuhol" (*Pila conica*) and "susong pampang" (*Viviparia angularis*) both fresh water snails which may harbor the infective stage of the parasite, is now widely distributed in the country. This may cause the infection if eaten fresh or inadequately cooked. Praziquantel is also the drug of choice. Preventive measures include avoiding ingestion of raw or improperly cooked snails harboring the infective larvae. Health education is essential for control of these parasitic infections.

Heterophyiasis

Twenty species of heterophyids have been reported in the Philippines. Heterophyiasis is a disease caused by these minute flukes living in the intestines of fish-eating hosts which include humans, mammals and birds. There are many species that infect humans but the major ones are: *Heterophyes heterophyes*, *Metagonimus yokogawai*, *Haplorchis taichui* and *Haplorchis yokogawai*. About 30 species of fish, of which some are popularly eaten, like *bangus*, *tilapia*, *danggit*, *kanduli*, *gisaw* and *dalag* were reported to harbor the infective larvae of the parasite. Heterophyids as a group have also become adapted to snails belonging to various families.

These fishes and snails can be found in fresh, brackish and salt waters. Signs and symptoms include colicky abdominal pain, mild diarrhea and neurological manifestations when brain or spinal cord is affected. Prevalence is low and distribution is spotty. Praziquantel is the treatment of choice. The infection can be prevented by cooking fish thoroughly. Control measures include: health education regarding eating habits, preventing seeding of fish culture ponds with human and animal feces, preventing defecation into bodies of water and preventing domestic animals from eating fish offal.

Taeniasis

Two species of tapeworms, *Taenia solium* and *Taenia saginata*, cause taeniasis and cysticercosis. When the infection is caused by the adult worm of *Taenia solium*, it is called **taeniasis solium**; when by adult of *Taenia saginata*, it is called **taeniasis saginata**. An infection brought about by the larval stage of the parasite is called, **cysticercus cellulosae**. Occurrence of cysticercosis due to *T. saginata* in man is unknown. Areas identified endemic for the disease are: Ilocos Norte, Ilocos Sur, Cagayan, La Union, Pangasinan, Zambales, Agusan del Norte and Leyte. Manifestations may include mild transitory intestinal obstruction which may give rise to vague abdominal pain similar to hunger pains. Infection due to larval stage is quite serious because it may lodge in vital organs like the brain, spinal cord, heart, liver and the eyes giving rise to pressure symptoms. The prevalence of taeniasis is directly related to the eating habits of the people. In places where people are fond of eating raw or insufficiently cooked pork, higher prevalence exists. Praziquantel and niclosamide are the drugs of choice. Praziquantel is given for all age groups. The purpose is to expel the worms. The most practical method of control is to avoid eating raw or insufficiently cooked meat. Proper disposal of excreta prevents the eggs from reaching the appropriate hosts.

Goal: Morbidity, mortality and other health effects of soil-transmitted helminthiases and other parasitoses are reduced.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the prevalence rate of soil-transmitted helminthiases to less than 50 percent in 25 provinces (pilot areas).
   (Baseline: 57 percent prevalence rate in 1995, UHNP; 64 percent prevalence rate in 1998, CDCS)
2. Reduce infection rate of other parasitoses in man in endemic areas.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Ensure 90 percent utilization of sanitary toilets by all households in 25 provinces and other endemic areas.
   (Baseline data is established in 2000)
2. Increase the percentage of children 2 to 14 years old washing hands before eating and after using toilet to 98 percent in 25 provinces.
   (Baseline: 75 percent, School Health and Nutrition Center, 1980-1990)
3. Increase the percentage of children wearing footwear to 100 percent in 25 provinces.
   (Baseline data is established in 2000)

4. Reduce the percentage of persons eating raw or inadequately cooked fish or meat in endemic areas.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Ensure 80 percent mass deworming coverage of children 2 to 14 years old two times a year for three years and once a year thereafter in 25 provinces.
   (Baseline data is established in 2000)
2. Initiate and institutionalize soil-transmitted helminthiases prevention and control program in 25 provinces.
   (Baseline: 1 provincial project site in Aurora in 1998, CDCS)
3. Increase the percentage of household with sanitary toilet facilities in 25 provinces and other endemic areas to 90 percent.
   (Baseline data is established in 2000)
4. Establish endemicity and prevalence rates of other parasites.
   (Baseline data is established in 2000)
5. Establish baseline knowledge, attitude and practices relevant to other parasitoses in endemic areas.
   (Baseline data is established in 2000)
6. Treat cases of other parasitoses in endemic areas.
   (Baseline data is established in 2000)

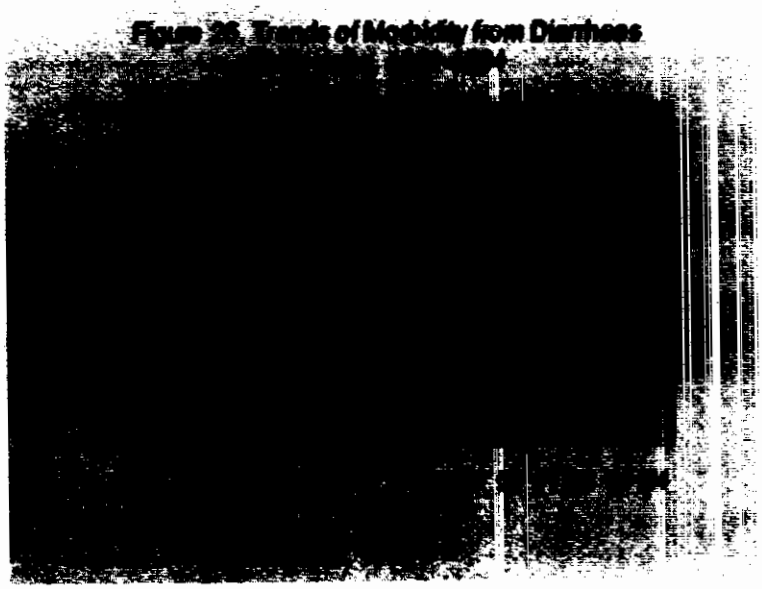
FOOD-BORNE AND WATER-BORNE DISEASES

A virus, bacteria, parasite or a combination of these may cause food-borne and water-borne diseases. These diseases are transmitted from person to person via soiled hands and via food and water contaminated by human waste, that is, through the fecal-oral route. The incidence of food-borne and water-borne diseases peaks during the rainy season and is usually high in areas where sanitation and hygienic practices are poor.

Food-borne and water-borne diseases are among the most common causes of diarrhea. Diarrhea is a clinical syndrome of diverse etiology that kills primarily through dehydration. If an episode of diarrhea lasts less than 14 days, it is acute diarrhea. If the diarrhea lasts 14 days or more, it is persistent diarrhea. Viral gastroenteritis, cholera, salmonellosis, shigellosis and amoebiasis are some common diseases that manifest with diarrhea.

Diarrhea remains the number one cause of illness in all age groups in the Philippines. It is also one of the most frequent causes of childhood illness and a major contributor to childhood malnutrition. The morbidity rate for diarrhea remains high at 1,250 cases per 100,000 population in 1995. The result of the 1998 National Demographic and Health Survey showed that diarrhea incidence is higher in Region 8 and CAR. The same survey showed a higher diarrhea incidence in children aged six to 23 months.

Figure 26. Trends of Morbidity from Diarrhea



Although deaths from diarrhea have significantly decreased for the past several years, it is still one of the leading causes of mortality among infants and children. Fifty-two percent of deaths due to diarrhea are among children under five years. Of these deaths, more than half are among infants. The mortality rate for diarrhea in 1995 was eight deaths per 100,000 population.

Studies on the different preventive interventions showed that exclusive breastfeeding in the first six months of life, improved feeding and food handling practices, provision of adequate clean water and sanitation facilities, handwashing practices, and measles immunization prevent diarrhea among infants and children.

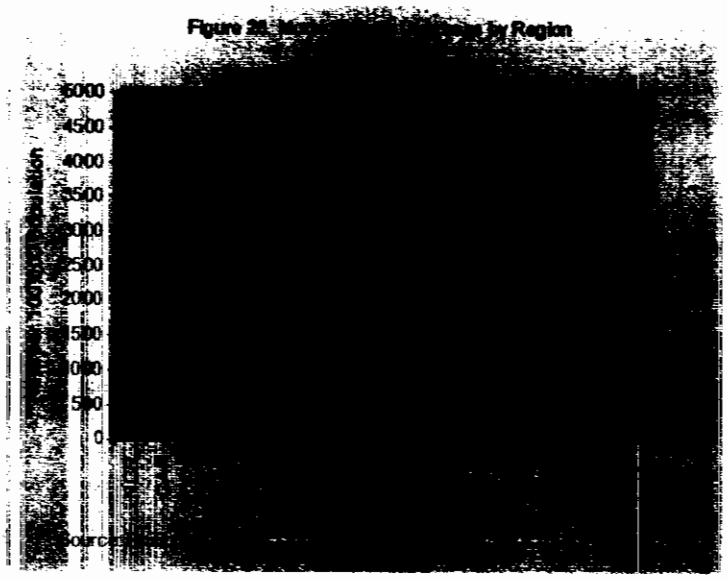
The main danger of diarrhea, especially among infants and children, is death due to dehydration and malnutrition. Large amounts of water and salt are lost from the body during episodes of diarrhea. For this reason, the best treatment for diarrhea is oral rehydration therapy and continued feeding. Around 90 percent or more of diarrhea cases can be successfully treated with this alone.

Based on the National Demographic and Health Survey, the use of oral rehydration therapy has increased from 27 percent of children with diarrhea in 1993 to 43 percent in 1998. Treatment with homemade fluids like rice water ("am"), fresh fruit juices, coconut water, soups, and milk also increased from 36 percent of children with diarrhea in 1993 to 49 percent in 1998. Altogether, 64 percent of children with diarrhea were given oral rehydration solution or the recommended home fluids.

The same survey showed that 93 percent of mothers know about oral rehydration, but only 43 percent of them have actually translated into positive behavior of giving oral rehydration during diarrhea. Seventy-three percent of mothers also know that children with diarrhea should be given more fluids but only 58 percent actually did.

Food-borne and water-borne diseases have caused massive epidemics not only in the country but worldwide. Only dramatic outbreaks of food-borne and water-borne diseases such as cholera, typhoid fever, hepatitis A and food poisoning have received attention. Many cases as well as outbreaks of food-borne and water-borne diseases have remained unnoticed and not reported at all.

For the past 10 years, the FETP has investigated several disease outbreaks. The most common among these outbreaks are food-borne and water-borne diseases, with cholera ranking first and typhoid fever ranking second among the leading causes of epidemics. Food poisoning, hepatitis A and diarrheas are also included among the 10 leading causes of epidemics in the country. Investigation of these outbreaks identified unsafe sources of drinking water, improper disposal of human waste and unsanitary food handling practices as the main causes.

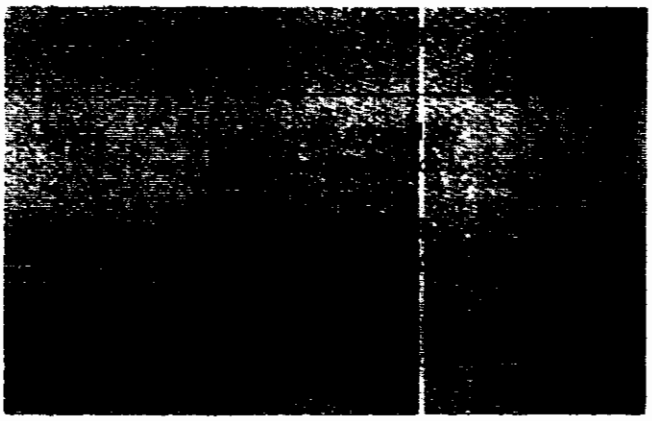


Several offices in the DOH are responsible for programs to prevent and control food-borne and water-borne diseases. The Maternal and Child Health Service handles the control of diarrheal diseases among children less than five years old. The Communicable Disease Control Service handles food-borne and water-borne disease programs for other age groups. The Environmental Health Service is in charge of sanitation programs, and the FETP handles disease surveillance and investigation of outbreaks.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the mortality rate of diarrhea among all age groups to four deaths per 100,000 population.
   (Baseline: 8.1 deaths per 100,000 population in 1995, PHS)
2. Reduce the morbidity rate of diarrhea among all age groups to 1,000 cases per 100,000 population.
   (Baseline: 1,250 cases per 100,000 population in 1995, PHS)
3. Reduce the outbreaks of other food-borne and water-borne diseases.



Risk Reduction Objectives

1. Increase the percentage of children with diarrhea given ORT and continued feeding to 80 percent.
   (Baseline: 64 percent given ORT in 1998, NDHS)

2. Increase the percentage of mothers and caregivers with basic knowledge and practice on home management of diarrhea (increased fluids, continued feeding and early referral) to 80 percent.
   (Baseline: 58 percent of mothers giving increased fluids in 1998, NDHS)
3. Increase the percentage of households practicing personal hygiene and safe food preparation, handling and storage by 10 percent.
   (Baseline data is established in 2000)
4. Increase the percentage of commercial food handlers (in food establishments and street food trade) trained on safe food preparation, handling and storage by 10 percent.
   (Baseline data is established in 2000)
5. Increase the percentage of school children practicing basic personal hygiene to 81 percent.
   (Baseline: 75.9 percent of children washing hands before eating and 71.4 percent of children washing hands after using the toilet in 1996, DOH-DECS KAP Survey)
6. Increase the percentage of school children utilizing sanitary toilet facilities to 70 percent.
   (Baseline: 60 percent of children utilizing sanitary toilet facilities in 1996, DOH-DECS KAP Survey)

Services and Protection Objectives

1. Increase the percentage of diarrhea cases correctly managed at health facilities to 90 percent.
   (Baseline data is established in 2000)
2. Increase the percentage of households with access to safe water to 91 percent.
   (Baseline: 87 percent in 1998, NDHS)
3. Increase the percentage of health facilities with standard case management capability for food-borne and water-borne diseases to 90 percent.
   (Baseline data is established in 2000)
4. Increase the percentage of households with sanitary toilet facilities to 85 percent.
   (Baseline: 81 percent in 1998, NDHS)
5. Increase the percentage of LGU's conducting food handlers' class.
   (Baseline data is established in 2000)
6. Establish food-borne and water-borne disease surveillance system to monitor cases and outbreaks in at least 10 percent of LGU's
   (Baseline data is established in 2000)

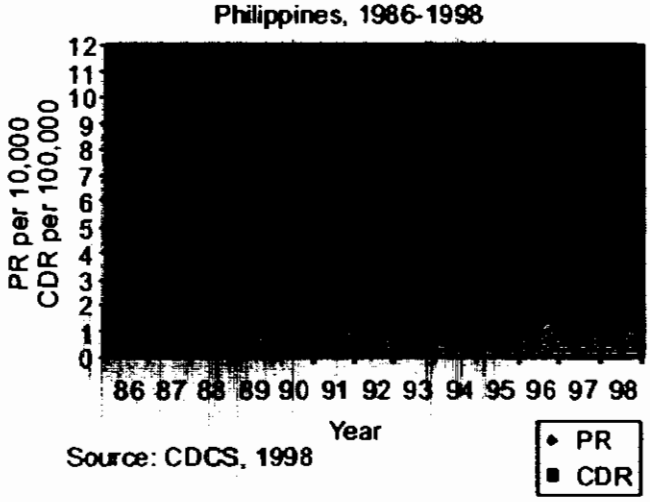
LEPROSY

Leprosy or Hansen's disease is a chronic bacterial infection caused by *Mycobacterium leprae*. It is the least communicable of all infectious diseases. Lesions on the skin and mucous membranes and involvement of the peripheral nerves with consequent anesthesia and muscle weakness characterize the disease.

The disease is transmitted through the respiratory tract by droplets of nasal discharges from untreated patients. The microorganism may also enter the body through the skin by prolonged intimate contact. Leprosy has neither age nor sex predilection although it has been observed that more males are affected than females.

The availability of effective drugs in treating leprosy has changed the management of patient, that is, from isolation to outpatient or ambulatory care. Hospitalization is needed only for managing severe lepra reactions and other complications, and surgical correction of deformities. Early detection of cases and provision of multi-drug therapy (MDT) on an outpatient basis, aided by health education and information dissemination, are the major strategies for leprosy control.

Figure 29. Prevalence Rate and Case Detection Rate of Leprosy Philippines, 1986-1998



Source: CDCS, 1998

In 1991, the Philippines and other member countries of the WHO, adopted the goal of global elimination of leprosy as a public health problem by bringing down the prevalence rate to less than one case per 10,000 population by 2000.

For the past 12 years the Philippines has greatly progressed in decreasing the number of persons afflicted with leprosy because of MDT. This strategy was first implemented in 1986 as a pilot project in two provinces, Ilocos Norte and Cebu. The project's success led to its nationwide implementation in 1988.

The National Leprosy Control Program was able to bring down the prevalence rate (PR) of leprosy from 7.2 cases per 10,000 population in 1986 to 0.9 cases per 10,000 population in 1998. Training of health workers and intensive information dissemination started in 1988 resulted in a steady increase in the case detection rate (CDR) from 5.3 cases per 100,000 population in 1986 to a peak of 11.4 per 100,000 in 1991. The devolution of health workers to the local government in 1992 slackened case finding activities, causing a gradual decrease in the CDR to 5.8 per 100,000 population in 1996.

Case finding activities increased in 1997 with the implementation of the Leprosy Elimination Campaign (LEC), Special Action Project for the Elimination of Leprosy (SAPEL), and Kilatis Kutis Campaign (KKC). These projects subsequently increased the CDR to 6.9 cases per 100,000 population in 1997.

An average of 4,000 new cases is detected yearly for the past five years. Eighty percent of these new cases are of the multibacillary type of leprosy, indicating late detection of most cases. The proportion of new cases with grade 2 deformity has decreased from 11.6 percent in 1988 to 5.1 percent in 1997. The proportion of new cases among those less than 15 years old did not show any significant change. Eight percent of new cases in 1997 are still among those less than 15 years old, reflecting that active sources of infection are still in the community.

In 1997, five of the 16 regions in the country have already achieved the leprosy elimination goal. Of the 77 provinces, 33 have already reduced the prevalence rate to less than one case per 10,000 population. The rest of the provinces have a prevalence rate of more than 1 per 10,000 population with the highest recorded in Ilocos Sur at 5.05 cases per 10,000 population.

The effectiveness of MDT, which made home treatment of leprosy possible, and the continuous decrease in leprosy cases led to the conceptualization of a National Sanitaria Succession Plan in 1992. The plan aims to expand the role of the existing eight sanitaria by developing their capabilities of providing medical services other than for leprosy

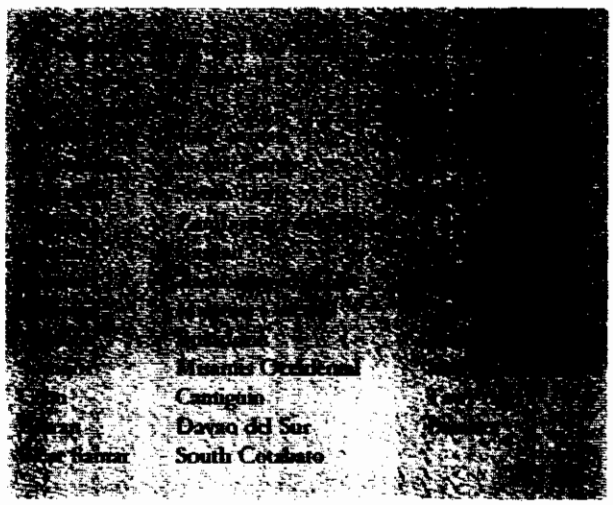
Goal: Leprosy is eliminated as a public health problem.

(Leprosy is considered eliminated as a public health problem if the prevalence rate is maintained at less than one case per 10,000 population.)

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the prevalence rate of leprosy to less than one case per 10,000 population at the sub-national level.
   (Baseline: 1.2 cases per 10,000 population in 1997, CDCS)



2. Reduce the proportion of new cases of leprosy with visible deformities to 2 percent.
   (Baseline: 5.1 percent in 1997, CDCS)
3. Reduce the proportion of new cases of leprosy less than 15 years old to 3 percent.
   (Baseline: 8 percent in 1997, CDCS)
4. Reduce the proportion of multibacillary leprosy patients among the new cases to 50 percent.
   (Baseline: 80 percent in 1997, CDCS)

Risk Reduction Objectives

1. Increase the proportion of households with correct information on the mode of transmission and curability of leprosy to 75 percent.
   (Baseline: 11 percent in 1998, NDHS)
2. Increase the proportion of individuals with skin lesions who voluntarily consult health facilities.
   (Baseline data is established in 1999)
3. Increase the proportion of patients completing treatment within the prescribed duration to 100 percent.
   (Baseline: 86 percent in 1997, CDCS)

Services and Protection Objectives

1. Increase the proportion of health workers with adequate knowledge, proper attitude and practices regarding leprosy to 75 percent.
   (Baseline: 50 percent in 1997, KAP Survey on Leprosy among Health Workers)
2. Integrate leprosy services in all DOH medical centers and regional hospitals and all provincial hospitals.
   (Baseline data is established in 2000)
3. Establish a referral and surveillance center in all provinces where leprosy has been eliminated as a public health problem.
   (Baseline data is established in 2000)
4. Establish in all LGU's with leprosy patients a Community-Based Rehabilitation Program to restore physical, emotional and social well-being of patients and make them useful members of society. *This activity will be conducted in collaboration with NCDCS and other organizations.*
   (Baseline data is established in 2000)
5. Sustain in all eight sanitaria the capability to provide medical services other than for leprosy.
   (Baseline: 1 sanitarium in 1997, CDCS)

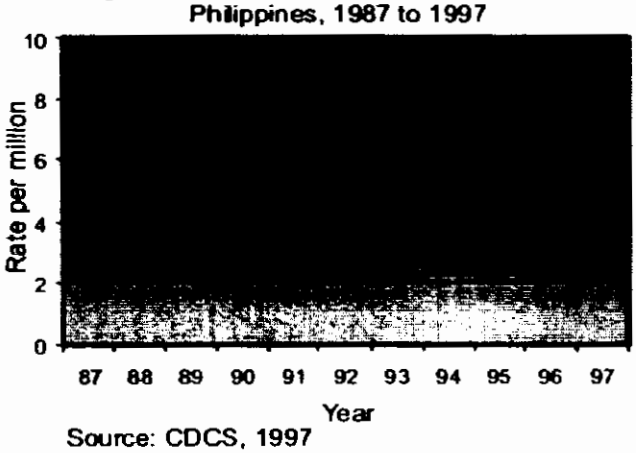
RABIES

Rabies is a fatal disease caused by the rabies virus, which is transmitted through a bite of an infected animal. The disease affects the nervous system. It usually manifests initially as headache, fever and weakness, then progresses to muscle spasms, paralysis, delirium and convulsions. Death is always an outcome and often due to respiratory paralysis. Individuals at high risk include veterinarians, wild life conservation and animal quarantine personnel, and laboratory and field personnel working with rabies.

Dogs remain the principal reservoir of rabies in the country. Thus, the most cost-effective measure against rabies is the vaccination of dogs. Education of dog owners and the public on responsible dog ownership should include restrictions like leashing of dogs within the yard. Dogs or cats known to have bitten a person should be observed for 14 days for any sign or symptom of rabies.

Thorough cleansing of the wound with soap and water immediately after an animal bite helps in decreasing the risk of getting rabies. Not all animal bite victims need immunization against rabies, but it is advised that animal bite victims consult the Animal Bite Treatment Center (ABTC) for proper management.

Figure 31. Incidence Rate of Human Rabies
Philippines, 1987 to 1997

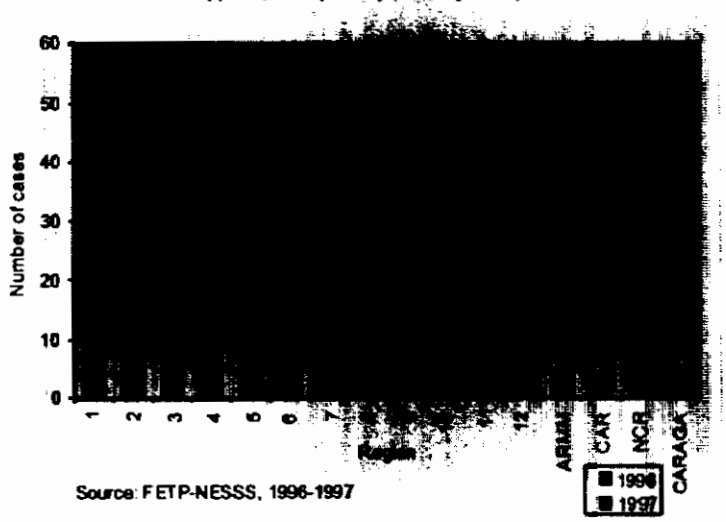


Source: CDCS, 1997

Rabies remains a public health problem in the Philippines. The annual incidence of rabies from 1987 to 1997 ranged from 5 to 9 cases per million population. Approximately 300 to 600 Filipinos die of rabies every year. The Philippines ranked fourth worldwide in rabies incidence in 1996.

The distribution of rabies cases varies among the different regions of the country. Regions 3, 4 and 5 are among the top five regions with the highest incidence of rabies in 1996 and 1997. The provinces of Bulacan, Pangasinan, Negros Occidental, Laguna and Camarines Sur recorded the highest number of rabies cases in 1997. Some regions in the Visayas and Mindanao have reported lesser number of cases in 1997.

Figure 32. Distribution of Human Rabies by Region Philippines, 1996 (N=337) & 1997 (N=321)



Source: FETP-NESSS, 1996-1997

A study of rabies cases from 1982 to 1986 at the San Lazaro Hospital showed that 98 percent are due to dog bites (88 percent by pet dogs and 10 percent by stray dogs) and 2 percent are due to cat bites. More than a third of all cases (38 percent) were noted among those less than 15 years old and a male to female ratio of 2:1 was noted. In 1997, the annual human rabies surveillance data showed that 53 percent of animal bite cases were among those less than 15 years old.

The incidence of animal bite cases in the country was estimated to be around 400 cases per 100,000 population. Fifteen percent of these require active immunization (vaccine) while 40 percent of those requiring active immunization will also need passive immunization (immunoglobulin). In 1996, only 34 percent of the animal bite cases were provided with vaccine and 2 percent with immunoglobulin. In 1997, 93 percent were given vaccine and 15 percent with immunoglobulin. The cost of post-exposure treatment is very high, ranging from P4,000 to P24,000, depending on the category of bite exposure.

Several agencies are collaborating to implement the National Rabies Prevention and Control Program. The Department of Agriculture (DA), the lead agency, conducts and supervises dog immunization and dog control measures. The DOH provides human anti-rabies immunizing agents to high-risk animal bite cases. Other partner agencies (like the Department of Education, Culture and Sports (DECS), Department of the Interior and Local Government (DILG), and the LGU's) help in promoting responsible dog ownership.

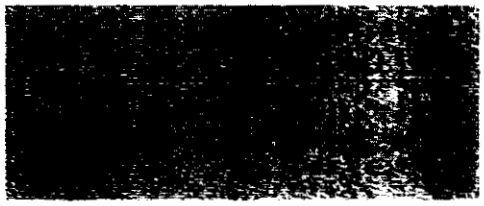
With the aim of eliminating rabies and declaring the Philippines rabies-free in 2020, the program provides technical assistance and information and education materials for extensive campaign on responsible dog ownership. To fully use vaccines, animal bite treatment centers were put up in strategic areas. Training of health personnel and logistic support are provided to these centers to ensure appropriate and standard management of animal bite cases.

The implementation of the program is beset with insufficient human anti-rabies immunizing agents and the lack of counterpart support from most LGUs in buying dog anti-rabies vaccine. Lack of local ordinances or laxity in the enforcement of local ordinances related to dog control measures, dog vaccination and practice of responsible dog ownership is also a major concern.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the incidence of human rabies cases to no more than three cases per million population.
   (Baseline: 5 per million population in 1997, CDCS and FETP)
2. Eliminate human rabies in the Visayas.



Risk Reduction Objectives

1. Reduce the number of rabid dogs to less than 10 per 100,000-dog population.
   (DA-BAI is the lead agency for dog control activities.)
   (Baseline: 28 rabid dogs per 100,000 population in 1997, DA-Bureau of Animal Industry [BAI])
2. Increase the proportion of households practicing immediate washing of animal bite site with soap and water to 90 percent.
   (Baseline: 37 percent in 1998, NDHS)
3. Increase the proportion of households practicing responsible dog ownership (immunizing dogs against rabies and leashing dogs within the yard) to 90 percent.
   (Baseline: 49 percent in 1998, NDHS)

Services and Protection Objectives

1. Increase the coverage of high-risk animal bite victims receiving post-exposure treatment (active and passive immunization) to 100 percent.
   (Baseline: 93 percent for active and 15 percent for passive immunization in 1997, CDCS)
2. Establish and maintain at least one animal bite treatment center with trained staff on intradermal regimen of anti-rabies administration in each of the 78 provinces and 82 cities in the country.
   (Baseline: 51 provinces and 32 cities with ABTC in 1998, CDCS)
3. Provide free pre-exposure prophylaxis for veterinarians and rabies laboratory technicians in 90 percent of government offices and laboratories.
   (Baseline data is established in 1999, DA-BAI)
4. Enforce ordinance on responsible dog ownership (dog immunization and dog leashing) and dog impounding activities in 50 percent of LGUs.
   (Baseline: Only 53 municipalities in 1998, CDCS)
5. Ensure a functional local rabies control committee in all regions, provinces and cities to strengthen local program implementation.
   (Baseline: 5 regions, 10 provinces and 8 cities in 1998, CDCS)

REPRODUCTIVE TRACT INFECTIONS

Reproductive tract infections (RTI) is made up of the following: sexually transmitted diseases (STD), which are infections transmitted through sexual intercourse or intimacy like gonorrhea, syphilis, chlamydial infection, warts and Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS); endogenous infections, which are caused by overgrowth of organisms normally present in the vagina like yeast infection and bacterial vaginosis; and iatrogenic infections, which result from medical procedures or instrumentation such as pelvic examination, episiotomy and episiorrhapy, dilation and curettage, catheterization, IUD insertion and abortion performed by modern or traditional health providers.

With the advent of AIDS in the Philippines during the 1980s, programs and services for the prevention and control of STDs have been geared toward an integrated approach to these problems. In the late 1990s, with reproductive health as the core framework, a redirection was initiated to expand the program to include other RTIs.

Since the time the first AIDS case in the country was reported in 1984 until the end of 1998, a cumulative total of 1,168 HIV positive cases have been reported to the AIDS Registry, 362 had AIDS and 186 have died. Seventy-eight percent of these cases have acquired the disease through sexual exposure. Data on the other modes of transmission are limited.

Hardest hit by the virus is the economically productive age group. Among males, the prevalence is highest in the 30 to 39 age groups. Among females, it is highest in the 19 to 29 age group. The disease is higher among males than females at a ratio of 1.4:1. The prevalence of HIV infection in the general population is less than 1 percent.

While the reported cases over a decade appear low, it is estimated that in 1999 there will be around 35,000 Filipinos infected with HIV, and by year 2000, this may increase to around 43,000. In the 15 years since the virus was reported in the Philippines, the annual average of reported cases has increased from 50 new infections a year between 1987-90 to 100 new infections a year between 1991-97. The highest number of new cases was reported in 1998.

The result of the Behavioral Surveillance System (BSS) showed that some major determinants for an epidemic to explode have started to surface in the Philippines. These include the practice of multiple sexual partners, low condom usage, sharing of drug injection equipment and increasing rates of syphilis. Syphilis rates, used as a surrogate indicator for risky behavior, appear highest and increasing among freelance female sex workers.

STDs are considered public health threat because of their devastating complications like pelvic inflammatory disease (PID), ectopic pregnancy, infertility and neonatal syphilis. In this country, STDs are often underreported and misclassified. In the 1997 Regional STD Statistics, diagnosed cases reported were highest in Regions 11, 7, 3, 5 and 9. Most common cases were chlamydia, gonorrhea, trichomonas and syphilis.

The STD Prevalence Survey done in 1994 among female sex workers (FSWs) revealed the prevalence of gonorrhea at 16 percent, chlamydia at 20 percent, trichomonas at 18.6 percent and syphilis at 4.6 percent. The survey also showed that among ante-natal women who represent the general population, the prevalence of STDs is much lower, with gonorrhea at 1 percent, chlamydia at 6 percent, trichomonas at 1 percent, and syphilis at 0.5 percent.

Baseline studies on the other RTIs, particularly on endogenous and iatrogenic infections, are yet to be established.

Despite the apparent low and slow progression of the HIV epidemic in the country, it is a major public health problem as no cure and no effective vaccine has been discovered yet. With an increasing rate of risk behaviors and fertile sociocultural milieu, a single case can grow into hundreds, thousands and eventually millions over time. Other RTIs and STDs help in the spread of HIV/AIDS. Their prevention and control can be used as an effective strategy in curbing the HIV/AIDS epidemic.

Goal: Transmission and impact of HIV/AIDS and other sexually transmitted diseases and reproductive tract infections are prevented and mitigated.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the prevalence rate of STDs and other RTIs.

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
a. Gonorrhea	[illegible]	[illegible]
b. Chlamydia	[illegible]	[illegible]
c. Trichomoniasis	[illegible]	[illegible]
d. Syphilis	[illegible]	[illegible]
e. Other STDs	[illegible]	[illegible]
Men [illegible]	[illegible]	[illegible]
Children [illegible]	[illegible]	[illegible]
Women [illegible]	[illegible]	[illegible]
clinic		
a. Gonorrhea	1.0%	0.8%
b. Chlamydia	[illegible]	5.0%
c. Trichomoniasis	[illegible]	0.8%
d. Syphilis	[illegible]	[illegible]
e. Other STDs	[illegible]	[illegible]

2. Confine the annual prevalence of HIV infection.

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
More [illegible]	[illegible]	<.3%

Risk Reduction Objectives

1. Increase the proportion of more vulnerable groups who report condom use during their last sexual intercourse at risk.

Special Target Population	1998 Baseline Behavioral Surveillance System	2004 Targets
Registered [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

2. Increase the proportion of more vulnerable groups who have knowledge of three correct ways of preventing transmission of HIV infection (staying with one faithful partner, using a condom during sexual intercourse and making sure that clean needles are used when injecting).

[illegible]	[illegible]	[illegible]
Registered female sex workers	63%	[illegible]
Freelance female sex workers	60%	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

3. Reduce the proportion of intravenous drug users who share drug injection equipment to 40 percent.
   (Baseline: 77 percent in 1998, Behavioral Surveillance System)
4. Reduce transfusion-transmitted HIV infection to less than 1 percent
   (Baseline: 1.1 percent in 1998, HIV/AIDS Registry)
5. Increase the proportion of hospitals with HIV/AIDS Core Team (HACT) practicing universal precaution to 100 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

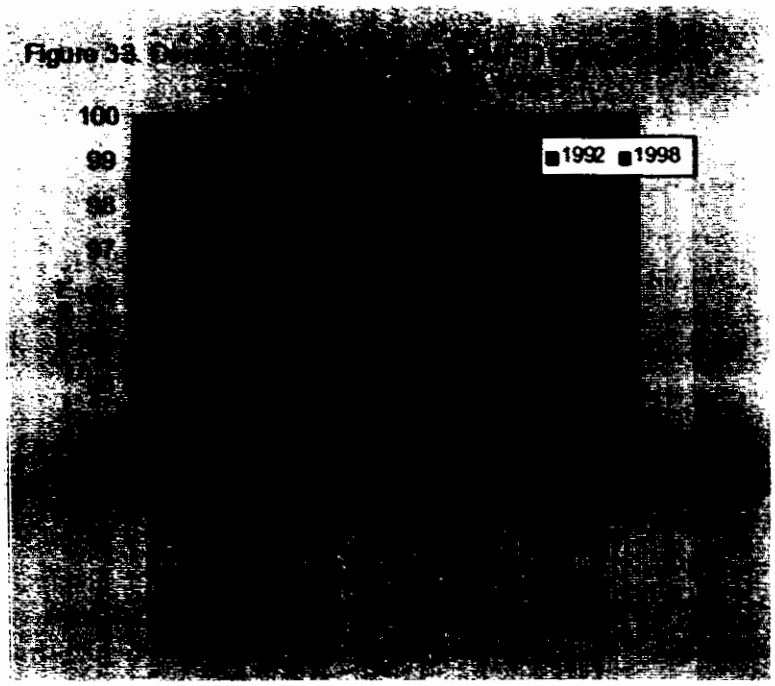
1. Ensure in all DOH Regional Hospitals and Medical Centers the capability of providing proper diagnosis, management, care of and support to people living with HIV/AIDS.
   (Baseline: Only three hospitals in 1998, AIDS STD Unit
2. Increase the number of Social Hygiene Clinics (SHC) and regional laboratories with upgraded capability for STD laboratory services to eight and two, respectively.
   (Baseline: Two SHC in 1998, DOH-JICA Project)
3. Increase the proportion of RHU's and SHCs providing STD services using the National STD Case Management Guidelines.
   (Baseline data is established in year 2000)
4. Increase the number of private medical practitioners providing appropriate STD care.
   (Baseline data is established in 2000)
5. Establish three sentinel sites in STD surveillance using syndromic reporting.
   (Baseline: 0 in 1998)

DENTAL CARIES AND PERIODONTAL DISEASE

Dental caries is a microbial disease of the calcified tissues of the teeth, characterized by demineralization of the inorganic portion and destruction of the organic substance of the tooth. It is the most prevalent chronic disease affecting humans without any predilection for age, sex, race or socioeconomic status.

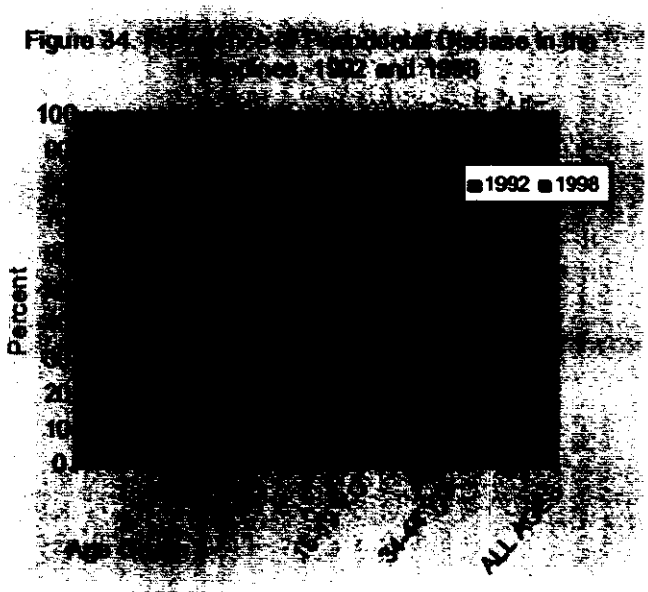
Four factors influence the development of dental caries: susceptibility of the host, microorganisms, substrate and time. The specific causative microorganism is *Streptococcus mutans*. The teeth and the periodontium are the host while sugar, particularly sucrose, is the substrate. Time is determined by the period between ingestion of sugar and clearance to render the pH level of saliva acidic.

Periodontal disease begins as gingivitis or inflammation of the gums and further destruction of periodontium caused by *Actinomyces* group of microorganisms. Periodontal disease develops early in the Filipino child and progresses during adolescence and adulthood. The process of developing periodontal disease starts from the inflammation of the gums, detachment of gums from tooth, pus formation in deepening sulci, destruction of bone and loosening of tooth.



In the Philippines, 97 out of 100 people suffer from dental caries and 60 out of 100 people have periodontal disease as gathered by the National Monitoring Evaluation Dental Survey (NMEDS) of 1998. The prevalence of these two common dental diseases affects almost entire communities. No community in the country is free of dental disease. Dental caries and periodontal disease are sources of infection for the development of systemic diseases.

Overwhelming and appalling in magnitude, these two diseases individually outranked the combined rates of the five leading causes of morbidity in the country. In the six-year period 1992-98, the prevalence of dental caries slightly fell from 98.2 percent to 96 percent. In the same period, the prevalence of periodontal disease rose from 48.1 percent to 60 percent.



Source: NMEDS, 1992 and 1998

Currently 94.9 percent of children aged 12 years and 95.2 percent of adolescents 15-19 years old have dental caries. Tooth loss is a major problem among people aged 35 years and above with nearly 94 percent having two or more missing permanent teeth in the maxillary and mandibular arches. Filipinos have an average of nine teeth dental caries experience of which four permanent teeth are missing, four teeth are decayed and one tooth indicated for extraction.

Three percent of adolescents 15-19 years old and those 35 years and above are edentulous. To date, 71.9 percent of the population need dentures, either partial, complete or for repair. If dental caries are not treated immediately, a toothless young generation of Filipinos might emerge. Other diseases and conditions of lesser prevalence are malocclusion, cleft lip and cleft palate, oral lesions and infection of the oral mucosa and bone.

Besides being disfiguring and psychologically detestable, dental caries and periodontal disease contribute to frequent absenteeism in school and industry. Although no study has been done in the country, absenteeism due to toothache could affect economic productivity. For every painful tooth due for extraction, two productive days are lost.

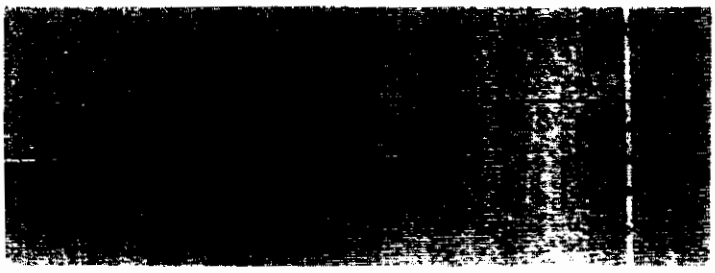
The important role of oral health in improving the quality of life and in the socio-economic development of the country is poorly appreciated. Except for the elite few, Filipinos continue to live with their dental problems in ignorance or with acceptance, in resigned tolerance or are simply unmindful of its existence. These are reflected in the high percentage of the population who have not received dental care and the early cumulative loss of permanent teeth.

Goal: Prevalence of dental caries and periodontal disease is reduced and the highest level of oral health care is attained.

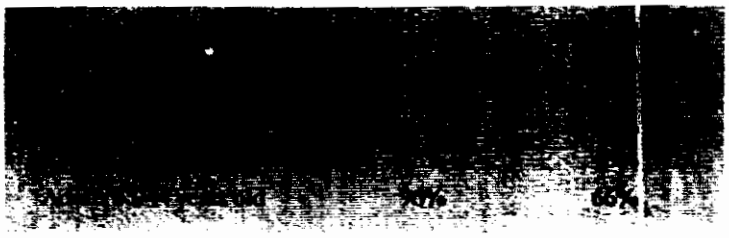
National Objectives for Health by 2004

Health Status Objectives

1. Reduce the prevalence rate of dental caries to 66 percent.
   (Baseline: 93.5 percent in 1998, NMEDS)



2. Reduce the prevalence rate of periodontal disease to 30 percent.
   (Baseline: 60 percent in 1998, NMEDS)

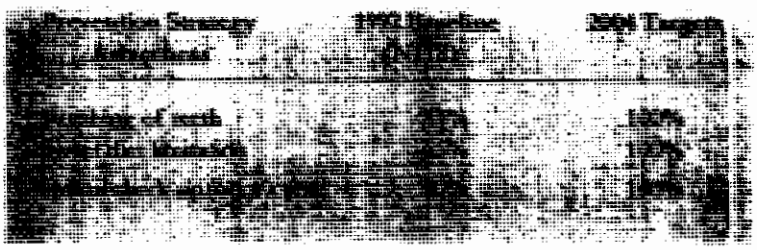


3. Reduce the average DMFXT (Decayed, Missing, Filled, and Indicated for Extraction Teeth) among 12-year-old children to three teeth.
   (Baseline: 4.57 teeth in 1998, NMEDS)
4. Increase the Filled (F) component over extraction ratio to 6:1 teeth
   (Baseline: 1:6 in 1998, NMEDS)

Risk Reduction Objectives

1. Increase the level of toothbrushing habit to 100 percent.
   (Baseline: 91 percent in 1992, NMEDS)
2. Increase the level of dental care seeking behavior to 100 percent.
   (Baseline: 80 percent in 1992, NHS)

3. Increase awareness on tooth decay prevention at the household level



Services and Protection Objectives

1. Increase the coverage of fluoride mouth rinsing and supervised toothbrushing drills among pre-school and school children to 80 percent
   (Baseline: 30 percent in 1997, FHSIS)
2. Increase the retention rate of dental sealant to 60 percent
   (Baseline: 30 percent in 1998, FHSIS)
3. Increase the coverage of gum treatment among pregnant mothers to 80 percent
   (Baseline: 60 percent in 1998, FHSIS)
4. Increase the coverage of oral prophylaxis among school children to 80 percent.
   (Baseline: 60 percent in 1998, FHSIS)
5. Increase the coverage of Atraumatic Restorative Treatment (ART) as secondary prevention strategy.
   (Baseline data is established in 2000)

DEGENERATIVE AND OTHER NON-COMMUNICABLE DISEASES

The remarkable gain in life expectancy, which has become longer for Filipinos, the decline in infant mortality and the breakthroughs in the fight against communicable diseases have shifted drastically the pattern of disabling and fatal diseases. The latter part of the 20th century has shown a steady rise in the prevalence of degenerative and other non-communicable diseases. Public expenditure for these diseases is increasing and greatly straining our health service delivery system. Effective strategies to address degenerative diseases must be put in place in order to reduce the morbidity, mortality and disability associated with them. The wealth of medical research reveals that much can be achieved in the fight against degenerative diseases through preventive strategies including personal discipline and education aimed at their early detection and treatment. Appropriate measures to prevent the onset of lifestyle-related diseases should be taken before the illness begins. Lifestyle that favors indulgence and excess and dangerous consumer products that increase the risk to some forms of illness should be totally discouraged.

Chronic and serious illnesses such as cardiovascular diseases, cancer and diabetes mellitus among others, are the results of heredity and the combined harm related to cigarette smoking, emotional stress, diet and environmental and behavioral influences capable of provoking ill health. The early diagnosis and prompt management of these diseases are the major control measures and protection against their debilitating effects or death.

Although infectious diseases remain as the major causes of morbidity, degenerative diseases have emerged as the major causes of mortality in the country today. Cardiovascular diseases (CVD) including hypertension and stroke have become the number one causes of death and account for more than 25 percent of all deaths in the Philippines. Other leading causes of deaths among the degenerative diseases are malignant neoplasms, chronic obstructive pulmonary diseases and diabetes mellitus.

One-third of all cancer is curable if detected early and treated properly. The top cancer sites in the Philippines include those whose major causes are known and therefore action can be taken for primary prevention. Cancer of the lungs can be prevented with more vigorous and sustained campaign against cigarette smoking;

PREVIOUS PAGE BLANK

liver cancer can be prevented by hepatitis B vaccination; Pap smear test and safe sex could prevent cervical cancer; while healthy diet prevents colorectal cancer.

The prevalence of asthma is increasing, especially among children. Most asthma patients report family history of the disease. Asthma may also result from sensitivity to allergens and may occur due to adverse environmental conditions such as air pollution and other irritants. There are close to 8 million Filipinos with asthma and its burden in terms of health costs is significant. The disease requires a public health approach that stresses prevention and education of patients and their families on reducing exposure to environmental allergens and irritants. Eliminating the barriers to health care will also greatly reduce morbidity and mortality.

Mental disorders are generally considered as inherited. However, severe emotional stress, frustrations and relentless pressure to achieve could trigger mental ill health and other serious illness as well.

Scientific evidence has proven that dietary habits and certain foods are linked with health problems as diverse as heart disease, diabetes mellitus, obesity and certain types of cancer on one end, and health problems like protein energy malnutrition and micronutrient deficiencies on the other end. The dietary pattern of most Filipinos has remained nutritionally inadequate both in quantity and quality to provide adequate levels of essential nutrients. It is necessary that appropriate public health measures like healthy diet advocacy and food fortification are intensified to protect and promote the health of people.

Risk factors associated with degenerative and other non-communicable diseases must be given attention. The promotion of healthy lifestyles, healthy diet and physical exercise among others could effectively prevent their onset. Instituting measures for their early detection and prompt management could prevent complications, disabilities or even death.

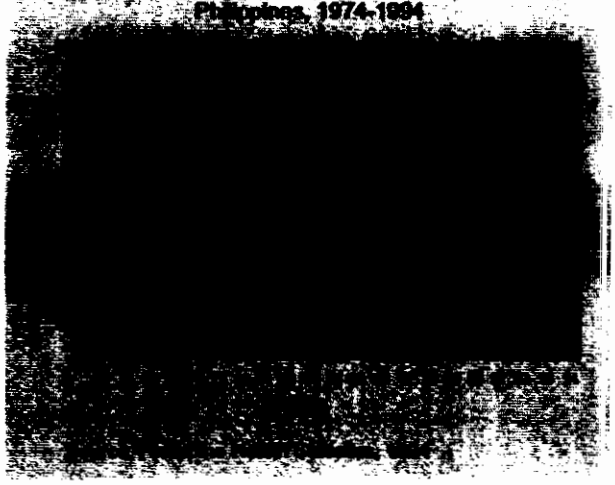
CARDIOVASCULAR DISEASES

Cardiovascular diseases (CVD) greatly threaten Filipinos today. The Filipino faces the risk of CVD throughout his life. At birth, congenital heart diseases and vascular malformations (CHD) are possible. In early childhood, the risk of rheumatic fever and rheumatic heart disease (RF/RHD) starts, peaking in adolescence. Arteriosclerotic changes in blood vessels may set in early adulthood and progress to hypertension (HPN), coronary artery diseases (CAD) or ischemic heart disease, resulting in heart attacks, common in middle age groups, particularly in males. In the elderly, the common complication of hypertension is cerebrovascular accident (CVA) or stroke.

CVDs have varied causes and risk factors, ranging from infectious agents to environmental and constitutional causes - some inherited and some acquired. Congenital heart diseases may arise out of genetic causes and maternal infections, diseases or drug intake. Rheumatic fever and rheumatic heart disease arise from frequent streptococcal sore throat. Essential hypertension is associated with heredity and high salt intake. CAD is linked with smoking, obesity, HPN, stress, hyperlipidemia, diabetes mellitus and a sedentary lifestyle.

Of all risk factors to CVD, smoking has the highest prevalence (46 percent). Hypertension (i.e., systolic blood pressure greater than 140 mm Hg or diastolic blood pressure greater than 90mm Hg) was found in 22 percent of the population, with greater prevalence in males and among the poor (FNRI 1998). The problem of HPN control appears rooted in low perceived risk, non-compliance to medications or the prescribed lifestyle modifications, poor monitoring and control of blood pressure. About 37 percent of hypertensive patients in one survey have high cholesterol levels. Family history of hypertension is also one of the predominant risk factors among Filipinos.

Figure 35. Mortality Trend of Cardiovascular Diseases Philippines, 1974-1994



Morbidity and mortality trends for cardiovascular diseases have been rising for the past several decades. The morbidity rate is 206.3 cases per 100,000 population while the mortality rate is 73.7 deaths per 100,000 population in 1994. CVD is now the number one cause of death and the seventh leading cause of morbidity in the country. The region with the highest morbidity for CVD is Region 7, followed by Regions 1, CAR, 2, and 6.

The Philippines has the highest death rate for hypertension in the region, second to Indonesia in mortality for rheumatic heart disease, fourth to Singapore for CAD, and third to Japan for stroke (*WHO 1990*). Artheriosclerotic-related diseases rank as first leading cause of death among Filipinos. Overall, deaths due to CVD comprise 25 percent of total deaths in 1995 (*PHS 1995*). The rise of CVD deaths is due to hypertension, CAD and cerebrovascular accidents, all of which have more than doubled during the period 1965-90 (*Facts and Figures, CVD in the Philippines*). The prevalence of congenital heart disease at birth is 5 per 1,000 livebirths. It declines rapidly as many of the cases die. At five years of age, the rate is about 1.5 per 1,000 and remains at 1.2 per 1,000 at age eight and onwards.

Applying appropriate measures at different stages of the disease must be done to prevent CVD. The first step of prevention is to apply measures before the illness begins. It is a significant step as most CVDs are permanent once they set in. The second step is protection through early diagnosis and prompt treatment. This is important in disease prevention and control so that illness may not progress and lead to disability or death. Rehabilitation to limit disability and prevent early death is the third level of CVD prevention.

Goal: Morbidity and mortality from cardiovascular diseases are reduced.

National Objectives for Health by 2004

Health Status Objectives

1. Limit deaths from CAD to no more than 33 deaths per 100,000 population.
   (Baseline: 33 deaths per 100,000 population in 1993, PHS)
2. Limit deaths from CVA to no more than 28 deaths per 100,000 population.
   (Baseline: 28 deaths per 100,000 population in 1993, PHS)
3. Reduce the prevalence of rheumatic fever/ rheumatic heart disease to no more than one case per 500 school children.
   (Baseline: One case per 1,000-school children in 1989, PHC)
4. Reduce the prevalence of congenital heart disease at birth to three cases per 1,000 live births.
   (Baseline: Five cases per 1,000 live births in 1997, Facts and Figures, CVD in the Philippines)

Risk Reduction Objectives

1. Increase knowledge of early warning symptoms of coronary artery disease and cerebrovascular disease.
   (Baseline data is established in 2000)
2. Reduce prevalence of overweight children and adolescents to less than 10 percent and adults (20 years old and over) to less than 15 percent.
   (Baseline: more than 10 percent in children and adolescents and more than 15 percent in adults (20 years old and over) in 1993, FNRI)
3. Maintain average dietary fat intake to 30 percent or less, and average saturated fat intake to less than 10 percent of calories among school age and older, based on two-day dietary data.
   (Baseline: Average total daily caloric intake of Filipinos from fat is 13.5 percent in 1993, FNRI)
4. Increase the proportion to at least 50 percent of school age and older who meet the average daily goal of not more than 30 percent of calories from total fat, and an average daily goal of less than 10 percent of calories from saturated fat.
   (Baseline data is established in 2000)
5. Reduce the average sodium intake to two grams per day or less.
   (Baseline: 3 to 6 gm/day in 1993, FNRI)
6. Increase proportion of people six years old and above engaging in daily light to moderate physical activity for at least 30 minutes a day at three times a week to 60 percent.
   (Baseline: 29 percent in 1998, NDHS)
7. Reduce the prevalence of cigarette smoking among children 6-11 years old to five percent; among 12-19 years old to 20 percent; and among 20 years old and above to 40 percent.
   (Baseline: prevalence of smoking among 6 to 11 years old is 15 percent, among 12 to 19 years old is 29 percent; and among 20 years old and above is 46 percent in 1998, FNRI)
8. Increase the proportion of adults, 18 years old and above who have regular blood pressure (BP) measurement to at least 50 percent.
   (Baseline: less than 10 percent of Filipinos have regular blood pressure (BP) check-up in 1998, NDHS)
9. Increase the proportion of people who are aware of their high BP and are taking action

to help control their BP to at least 50 percent.
(Baseline: 8-15 percent of hypertensives are taking action to control their BP in 1989, PHC)

10. Increase the proportion of hypertensives with controlled BP level to at least 75 percent.
(Baseline: 15-20 percent of hypertensives are controlled with either non-pharmacological and pharmacological management in 1989, PHC)

11. Reduce the prevalence of hypertension among Filipinos to less than 15 percent.
(Baseline: prevalence of hypertension is 22 percent in 1993, FNRI)

12. Maintain the mean serum cholesterol level among adults to within normal limits of 180-205 mg/dl.
(Baseline data is established in 2000)

Services and Protection Objectives

1. Improve orientation and training of LGUs, communities and family members of high-risk individuals on healthy lifestyles to prevent CVD and its complications, on early warning signs and symptoms of a heart attack and stroke; and the importance of seeking rapid emergency evaluation.
(Baseline study is ongoing)

2. Achieve useful and informative nutrition labeling for all processed foods and at least 40 percent of ready-to-eat, take-out foods and achieve compliance by at least 80 percent of retailers with the voluntary labeling of fresh meats, poultry, seafood, fruits and vegetables.
(Baseline data is established in 2000)

3. Increase the number of brand item processed food products with reduced total fat and saturated fat.
(Baseline data is established in 2000)

4. Increase the proportion of schools providing nutrition education as part of a comprehensive school health education to at least 75 percent.
(Baseline study is ongoing)

5. Increase the proportion of work sites with 50 or more employees offering education and information services on blood pressure and cholesterol control to at least 50 percent.
(Baseline data is established in 2000)

6. Increase the proportion of provinces and municipalities conducting regular BP check-up campaigns and services among high-risk groups to 75 percent.
(Baseline data is established in 2000)

7. Increase the proportion of provinces and districts offering annual blood cholesterol-screening services for 40 years old and above to 100 percent and 75 percent, respectively.
(Baseline data is established in 2000)

8. Increase the proportion of provinces and districts offering health education on drug and substance abuse and on infection prevention for pregnant mothers to 95 percent and 90 percent, respectively.
(Baseline data is established in 2000)

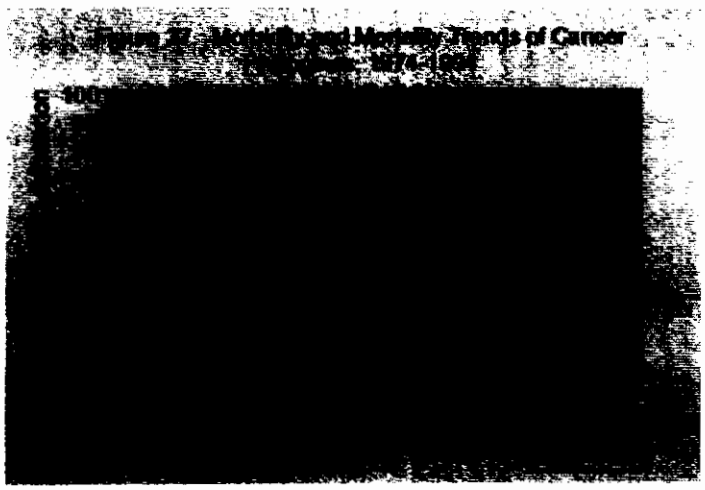
9. Increase the proportion of provinces with effective surveillance mechanism and accurate data on CVD to 75 percent.
(Baseline data is established in 2000)

CANCER

Cancer is the result of uncontrolled growth of body cells. This growth produces tumors or abnormal masses of tissues. When they spread to other body parts, they are called cancerous or malignant and have more serious implications on health and life. One or more combinations of factors affect the risk of cancer. Age, sex, family history and race may bring unavoidable predisposition to certain cancers.

Cancer is largely considered a lifestyle disease. Lifestyle and environment-related factors that may predispose a person to cancer are occupation, smoking, diet, sexual activity, infectious agents, pollution and sun exposure. Tobacco smoking is the most significant single cause of all cancer deaths, causing 30 percent of all cancers.

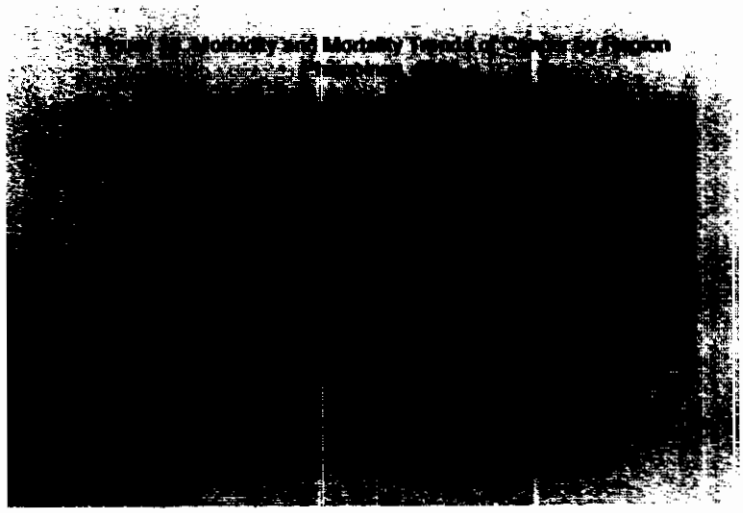
Over 100 different cancers have been identified in humans. In the Philippines, the five leading cancer sites are the lungs, breast, liver, cervix uteri and colorectal area. Among males, the leading sites are the lungs, liver and prostate. Among females, the leading sites are the breast, cervix and lungs. Among children, the leading cancers are the leukemias and lymphomas.



Cancer was the fourth leading cause of death in the country in 1994. Cancer prevalence has been increasing in the past decades, with a morbidity rate of 31 cases per 100,000 population in 1974 to 72 cases per 100,000 population in 1994. Mortality rate has also increased from 30 deaths per 100,000 population in 1974 to 41 deaths per 100,000 population in 1994. The regions with the highest prevalence of reported cancer cases are NCR, Regions 3, 1, 7 and 4.

The most common cancers in recent years involve the lungs (35 cases per 100,000), the breast (25 cases per 100,000 overall, or 50 cases per 100,000 females), the liver (13 per 100,000), the cervix uteri (11 per 100,000), the colon (10 per 100,000),

the prostate (9 per 100,000), and in children, the leukemias (64 per 100,000).



Lung Cancer

Lung cancer is the most common cause of cancer deaths among both men and women in the country. Cigarette smoking is the most important risk factor for lung cancer, accounting for about 90 percent of lung cancer deaths among men and 70 percent of deaths among women (*CDC 1993*). Other risk factors include occupational exposures (radon, asbestos, etc.) and indoor and outdoor air pollution (radon, environmental tobacco smoke, etc.) (*Greenwald, Kramer and Weed 1995*). From one to two percent of lung cancer deaths were due to air pollution (*Doll and Peto 1981*). Smoking accounts for 53 percent of the deaths from other smoking-related cancer death rates (oral, bladder, kidney, pancreatic and esophageal) among persons 54-84 years of age.

Breast Cancer

Breast cancer is the most common cancer among women with an incidence of 25 cases per 100,000. Death from breast cancer can be substantially reduced if the tumor is discovered early. Mammography is the effective method for detecting early malignancies that can reduce breast cancer mortality by 20-39 percent in women 50-74 years of age (*Kerlikowske et al 1995*). Up to 39 percent of breast cancer deaths might be avoided if all women followed screening recommendations. More recently, international experts endorsed universal screening for women in their 40s. The value of breast self-examination and clinical breast examinations is important in the absence of mammography.

Cervical Cancer

Cervical cancer is the second most common cancer among women. Evidence has shown that screening can reduce death from cervical cancer. If cervical cancer is detected while the malignancy is in *situ*, the likelihood of survival is almost 100 percent with appropriate treatment and follow-up. Almost all cervical cancer deaths can be avoided if all women complied with screening and follow-up recommendations. An updated review of established risk factors for cervical cancer, including human papilloma virus (HPV) infection, was provided by Schiffman et al in 1996. Public health recommendations to reduce the incidence of human immunodeficiency virus (HIV) infection and STDs are likely to have a beneficial impact on cervical cancer risk. The recommended routine screening is a Pap smear test beginning with age of sexual activity and repeated every three years until the age of 65 provided that smears are consistently normal.

Colorectal Cancer

Colorectal cancer is the fifth leading cause of cancer. Risk factors for this cancer include: age, male gender, personal and family history of polyps or

colorectal cancer, inflammatory bowel disease, inherited syndromes, other cancers (breast, ovary and endometrium), and physical inactivity, obesity, alcohol use, and a diet high in fat, low in fiber, fruits and vegetables.

Digital rectal examination (DRE), fecal occult blood test (FOBT) and sigmoidoscopy are widely used to screen for colorectal cancer. Barium enema and colonoscopy are generally used as diagnostic tests. The DRE can detect less than 10 percent of colorectal cancer while FOBT has variable sensitivity and specificity and a low predictive value positive for carcinoma. Sigmoidoscopy detects 1-4 cases per 1,000 examinations.

Evidence exists that reduction in colorectal cancer deaths can be done through detection and removal of the precancerous polyps and treatment of cancer in its earliest stage. Annual screening with FOBT and flexible sigmoidoscopy every 5 years for all persons 50-75 years old is important. Exercise and dietary changes that include lessening of fat intake and alcohol consumption, and increase in high-fiber diet are important steps to reduce the incidence of colorectal cancer.

Prostate Cancer

Prostate cancer is the second leading cause of cancer deaths in men. Risk factors include age, especially in elderly, family history, and a diet high in fat. Relevant studies have concluded that DRE and prostate serum antigen (PSA) have not been shown to reduce deaths or improve the quality of life. Indirect evidence suggests that survival is better at an early stage.

More prostate cancer has been detected in early stages as a result of screening. Experts recommend annual DRE and PSA in men 50 years old and older and in younger age groups who are at high risk, especially those with a family history of prostate cancer.

One-third of all cancers is curable if detected early and treated properly. The top cancer sites in the Philippines include those whose major causes are known and therefore action can be taken for primary prevention. Examples are cancers of the lung-larynx (anti-smoking campaign), liver (hepatitis B vaccination), cervix (safe sex), and colon-rectum-stomach (healthy diet).

Continuous nationwide public education and subsequent action can effect early detection and treatment aimed at a cure of cancers of the breast, cervix, rectum, oral cavity, prostate, ovary, blood, lymph nodes and nasopharynx.

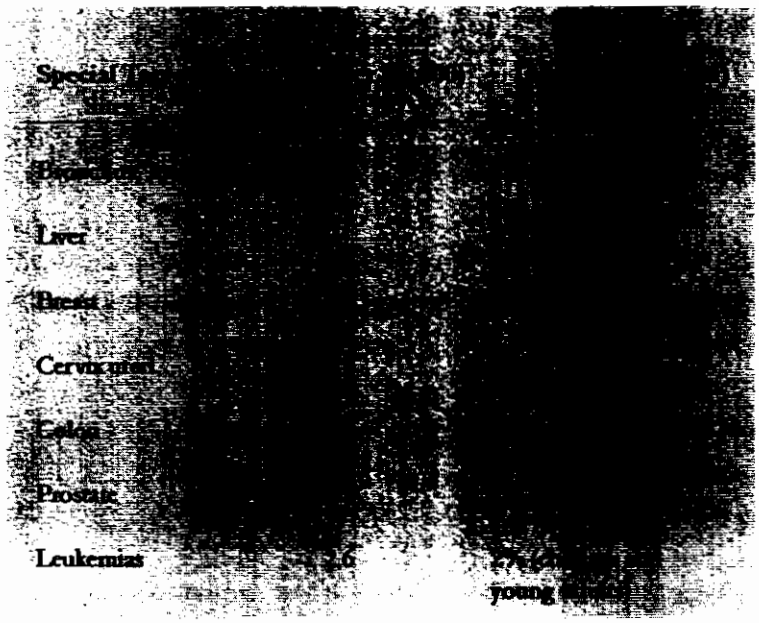
The three major forms of treatment for cancer are surgery, radiation therapy and chemotherapy. Cancers not detected early, which present at an advanced stage at the time of diagnosis and which cannot be cured, can be given supportive care. Supportive care is for a symptom-free existence, with spiritual and psychosocial support.

Goal: Morbidity and mortality rates from cancer are reduced.

National Objectives for Health by 2004

Health Status Objectives

1. Limit the mortality rates from all cancers to not more than 52 deaths per 100,000 population
   (Baseline: 53 deaths per 100,000 in 1995, PHS)



Risk Reduction Objectives

1. Increase awareness of Filipinos on the early signs and symptoms of cancers to more than 50 percent.
   (Baseline: 20 percent in 1998, NDHS)
2. Reduce the prevalence of cigarette smoking among children 6-11 years old to 5 percent; among 12-19 years old to 20 percent; and among 20 years old and above to 40 percent.
   (Baseline: prevalence of smoking among 6-11 years old is 15 percent; among 12-19 years old is 29 percent, and among 20 years old and above is 46 percent in 1998, FNRI)
3. Reduce the prevalence of alcohol drinking among Filipinos to less than 40 percent.
   (Baseline: 46 percent in 1998, Dans Monograph)
4. Increase awareness and practice of eating diet high on soluble fiber among school children and adolescents to more than 50 percent; among adults to more than 70 percent.
   (Baseline data is established in 2000)
5. Increase awareness and practice on the moderate use of fat and sugar among adults to more than 50 percent and among the elderly to more than 70 percent.
   (Baseline data is established in 2000)
6. Increase the proportion of women of reproductive age and above who practice monthly breast self-examination to more than 50 percent.
   (Baseline: 27 percent in 1989, Ngelangel)
7. Increase the proportion of women 35-40 years old who receive clinical (physician) breast examination every three years and annually thereafter to 70 percent.
   (Baseline: 37 percent in 1989, Ngelangel)
8. Increase the proportion of women 40-69 years old who have mammography every three years and annually thereafter to 50 percent.
   (Baseline data is established in 2000)
9. Increase the proportion of women 18-65 years old who have one pap smear test once every three years to 50 percent.
   (Baseline: 37 percent in 1997, DOH)

10. Reduce the prevalence of hepatitis B virus infection to less than 10 percent
(Baseline: 60 percent in 1997, DOH)
11. Reduce the prevalence of human papilloma virus infection of the cervix to less than 5 percent.
(Baseline: 9.2 percent in 1997, DOH)

Services and Protection Objectives

1. Increase the proportion of primary care providers routinely counseling patient on tobacco use cessation, diet modification, moderate alcohol consumption and cancer screening to 75 percent.
(Baseline: 30 percent in 1997, DOH)
2. Increase the proportion of primary care doctors capable of doing clinical breast examination to 90 percent.
(Baseline data is established in 2000)
3. Ensure the availability of mammography and quality pap smear screening in all regions and provinces.
(Baseline data is established in 2000)
4. Increase the coverage of Hepatitis B vaccination among infants to 95 percent.
(Baseline: 36.5 percent in 1997, FHSIS)
5. Increase the proportion of people aged 50 years and older submitting to colorectal screening (FOBT) to 75 percent.
(Baseline data is established in 2000)
6. Increase the proportion of males aged 50 years and older submitting to digital rectal examination to 50 percent.
(Baseline data is established in 2000)
7. Establish support care program for cancer patients in all provinces and 75 percent of municipalities.
(Baseline data is established in 2000)

DIABETES MELLITUS

Diabetes mellitus is a condition where there is poor activity or decreased production of a hormone called "insulin," resulting in an increase in blood sugar. Predisposition to the disease is inherited, but in most cases a person's lifestyle triggers the development of the disease.

There are two types of diabetes mellitus. In Type 1, the onset of the disease is usually among the young, and the increase in blood sugar is due to lack of insulin. Type 2 usually occurs among older age groups but can also occur in the young and is due to decreased activity of the insulin produced. Most symptoms appear very late in the stage of the disease. A lot of diabetics do not have symptoms when their blood sugars are elevated for the first time. Only a blood examination can determine if one has elevated blood sugar levels. Signs and symptoms in diabetes usually are: frequent urination especially at night, increased hunger and thirst, sudden weight loss, blurring of vision and poor wound healing. Almost 50 percent of diabetics do not have symptoms and discover the condition only during regular check-ups.

International and local diabetes experts believe that the disease is emerging, especially among developing countries in Asia. In the Philippines, the death rate from diabetes has risen by an alarming 63 percent in 10 years' time, from 4.3 per 100,000 population in 1984 to 7.1 per 100,000 population in 1993 (*PHS*). Local studies have shown that there is under-reporting of deaths due to diabetes because they are misclassified as deaths from cardiovascular or renal disease.

A 1982 nationwide prevalence survey on diabetes by the DOH showed that four out of 100 Filipinos are diabetics (4.1 percent prevalence). The prevalence was higher in urban (6.8 percent) than in rural areas (2.5 percent). The prevalence increases with age with a dramatic rise observed in the 50 year old age group. However, about 63 percent of those with the disease were unaware that they had diabetes. The WHO estimates that diabetes prevalence in Southeast Asia doubles every 5-10 years based on the Singapore experience. With this assumption, prevalence of diabetes in the country today could be in the range of 8-16 percent and may approximate that of Singapore, an industrialized country in Southeast Asia.

Diabetes can be prevented if people with family history eat less salty, fatty, oily and sweet foods, maintain the normal body weight, exercise regularly, avoid smoking, alcohol and stress. There is still no known cure for diabetes. Once a

diabetic, a person has to take therapy for the rest of his life to maintain a normal blood sugar level and to prevent complications.

Treatment for Type I is insulin, while treatment for Type 2 can begin with diet modification and change to a healthy lifestyle. If blood sugar is not controlled, tablets and insulin injections may be given. If treatment is not given on time, the patient may go into a coma and die. For type 2 diabetics, death may come very slowly. Patients usually develop complications such as hypertension, heart disease, kidney disease, blindness and loss of sensation in the hands and feet. The Type 2 patient may die as a result of damage to body organs brought about by high blood sugar levels.

Prevention through proper diet patterns and healthy lifestyles is the focus of the DOH, targeting people not yet afflicted with the disease but with a risk for developing it. Diabetics will be educated on proper self-care to prevent complications. Patients with complications from diabetes will be given adequate access to rehabilitation services and referrals to facilities with specialists.

The direct and indirect costs associated with diabetes and its complications make it a very expensive disease, exacting a heavy toll on the affected person, the family and society, if it is not prevented and controlled.

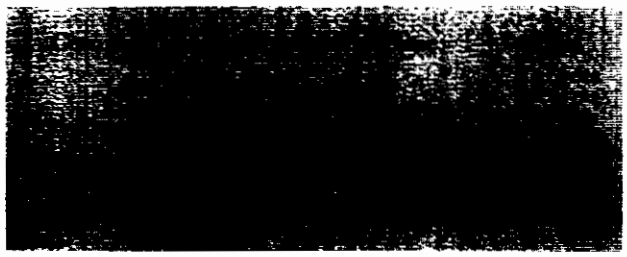
Goal: Morbidity, mortality and complications from diabetes mellitus are

National Objectives for Health by 2004

Health Status Objectives

1. Reduce diabetes-related deaths to less than eight deaths per 100,000 population.
   (Diabetes-related deaths refer to deaths from diabetes as an underlying or contributing cause. Persons with diabetes mellitus experience death rates 2-4 times greater than the non-diabetic persons, especially from cardiovascular diseases. Other causes of death include end-stage renal disease (ESRD), diabetic acidosis, and infection. Death rates and their significance are complicated by the degree of ascertainment of diabetes as recorded on death certificates.)
   (Baseline: 10 deaths per 100,000 population in 1995, PHS)
2. Reduce the prevalence of diabetes to less than 15 percent.
   (Baseline: 15 percent projected prevalence in 1998, DOH.
3. Reduce perinatal mortality complications among infants of diabetic mothers.
   (Baseline data is established in 2000
4. Reduce the frequency of major congenital malformations among infants of diabetic mothers.
   (Studies of diabetes and pregnancy conclude that proper pre-pregnancy and pregnancy glycemia control and careful perinatal obstetrical monitoring are linked with reduction in perinatal mortality and congenital malformations.)
   (Baseline data is established in 2000

5. Reduce the prevalence rate of severe complications from diabetes.



Risk Reduction Objectives

1. Reduce the prevalence rate of overweight children and adolescents to less than 10 percent and adults (20 years old and over) to less than 15 percent.
   (Baseline: more than 10 percent in children and adolescents and more than 15 percent in adults 20 years old and over in 1993, FNRI)
2. Increase the proportion of people six years old and above engaging in daily light to moderate physical activity for at least 30 minutes a day at three times a week to 60 percent.
   (Baseline: 29 percent in 1998, NDHS)
3. Maintain average dietary fat intake to 30 percent or less, and average saturated fat intake to less than 10 percent of calories among school age and older, based on two-day dietary intake; increase the proportion to at least 50 percent of school age and older who meet the average daily goal of not more than 30 percent of calories from total fat, and an average daily goal of less than 10 percent of calories from saturated fat.
   (Baseline: average total daily caloric intake of Filipinos from fat is 13.5 percent in 1993, FNRI; the proportion of Filipinos, school age and older who meet average daily goal of required percent calories from total fat and saturated fat, is established in 2000)
4. Increase the proportion of adults 18 years old and above who have regular blood pressure (BP) measurement to at least 50 percent.
   (Baseline: less than 10 percent in 1998, NDHS
5. Increase the proportion of hypertensives with controlled BP level to at least 75 percent.
   (Baseline: 15 to 20 percent in 1989, PHC)
6. Maintain the mean serum cholesterol level among adults to within normal limits of 180-205 mg/dl.
   (Baseline data is established in 2000)
7. Increase the proportion of patients with diabetes who yearly get lipid assessment (total cholesterol, LDL, HDL, triglyceride) to more than 75 percent.
   (Baseline data is established in 2000)
8. Increase the proportion of patients with diabetes who have at least an annual urinary measurement of microalbumin to more than 80 percent.
   (During the past decade, scientific investigations have established that controlling serum macrovascular risk factors, lipids, as well as microvascular factors and blood glucose will result in fewer diabetes-related complications.)
   (Baseline data is established in 2000)
9. Increase the proportion to 80 percent of the general population and 90 percent of persons at risk who are aware of diabetes and their early signs and symptoms.
   (Baseline: 50 percent awareness of the general population in 1982, DOH)
10. Increase the proportion of persons with diabetes whose condition has been diagnosed to 80 percent.
    (Baseline: 50 percent in 1982, DOH)

Services and Protection Objectives

1. Increase the proportion of people 20 years old and above who have their blood sugar checked using a cost-effective blood glucose screening and maintaining regular follow-up to 75 percent; increase the proportion of high-risk children having their blood sugar checked to 90 percent.
   (Baseline data is established in 2000)
2. Increase the proportion of diabetics having their eyes, kidney and lower extremities checked for abnormalities at the time of diagnosis to 85 percent.
   (Baseline: less than 15 percent of diabetics diagnosed at first visit are checked for existing complications in 1996, DOH)
3. Increase the proportion of diabetics who have received diabetes education to more than 80 percent.
   (Baseline data is established in 2000)
4. Establish an effective National Diabetes Surveillance System.
   (Baseline data is established in 2000)

KIDNEY DISEASES

There are about 6,500 yearly deaths in the country secondary to various kidney diseases (Kidney Center of the Philippine, Medical City 1975-1981). Renal diseases threaten to be one of the leading causes of death if there will not be effective prevention and control programs to address the problem. If asymptomatic kidney diseases are left undiagnosed and untreated, they will progress and lead to chronic kidney disease.

The most important health consequence of chronic kidney disease is renal failure. When renal function has worsened to a point where it is no longer adequate to sustain life and the process is irreversible, the patient has end-stage renal disease (ESRD). The DOH reported that there are about 5,000 new cases of ESRD a year. For these individuals the beginning of ESRD, sometimes called renal death, mean permanent dependence on renal replacement therapy to stay alive.

Two methods of treatment are available for these patients: dialysis and renal transplantation. The Renal Disease Registry (RDR) reported a total of 857 new patients who started dialysis therapy in 1998. The RDR represents 65 percent of all patients treated for ESRD. Only 22 percent are receiving treatment. While dialysis is a lifesaving treatment, it has substantial limitations. They are expensive and patients are usually underdialyzed because of the cost, thus patients are unable to return to work or to normal life. The morbidity and mortality experienced by the treated ESRD population is substantially higher than for the general population.

In most instances, ESRD is the consequence of progressive damage to the kidney over a decade or more. A number of underlying diseases can cause progressive renal failure. Chronic glomerulonephritis (CGN) is the most common cause (47 percent) of ESRD in Filipinos. Other causes include chronic pyelonephritis (17 percent), diabetes mellitus (13 percent), and hypertensive nephrosclerosis (5 percent) (*Kidney Center of the Philippine, Medical City 1975-1981*). Among dialysis patients, the leading causes of ESRD are chronic glomerulonephritis (39 percent), diabetes mellitus (22 percent), and hypertension (14 percent) (*RDR, 1998*). Other conditions that contribute significantly to chronic renal failure are: vasculitis, interstitial nephritis, and genetic and congenital disorders, and most importantly, polycystic kidney disease.

ESRD affects persons of all ages. The peak incidence is in the 40s. ESRD is particularly devastating in childhood because it impairs growth and development. CGN usually affects children, adolescents and young adults in their productive years. The poor have the highest incidence of CGN (*NKF, 1999*). In industrialized countries, good nutrition, clean environment, advances in medical care, and early detection of the disease have resulted in declining incidence of CGN as a major cause of renal failure.

One primary reason for CGN progression is failure to diagnose the disease in its early stages. Simple urinary screening of asymptomatic children has shown the presence of latent CGN, urinary tract infections, diabetes and congenital urologic abnormalities. Under certain circumstances, progression of renal disease can be slowed. Three interventions have been effective in defined populations: increased case finding and treatment for CGN, good glycemic control (for patients with diabetes mellitus), and optimum blood pressure control with use of angiotensin converting enzyme inhibitors.

Interventions to slow the progression of kidney disease and prevent ESRD have the greatest impact if applied early in the course of the disease. Unfortunately, because kidney disease at early stages is generally asymptomatic, many persons who would benefit from interventions are not identified. Therapy to slow the progress of kidney disease is often late. Thus, early identification of patients at risk for ESRD is essential if incidence is to be reduced.

The care of patients with chronic renal failure must continue to conserve residual renal function. At a certain stage, it is also important to provide appropriate preparation to start renal replacement therapy. Renal transplantation is the preferred method of therapy for many patients with ESRD, particularly children. Renal transplantation has a survival advantage over dialysis. Transplantation success rates, especially the one year patient and graft survival rates, have steadily improved over the last two decades.

The increasing incidence rates of ESRD, its impact on people, the high societal cost of the disease, and the impact on scarce health care resources all show that attention to risk factors for renal impairment and interventions to slow the progress of renal disease are urgently needed.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the occurrence of kidney diseases and incidence rate of ESRD to 3,000 cases a year. *(Without improved prevention based on demographics and increased prevalence of risk factors for ESRD, the incidence rates are predicted to rise five percent a year. Most ESRD results from progressive worsening of chronic kidney injury over several years. For example, ESRD from diabetic nephropathy generally occurs 15-20 years after the onset of diabetes. ESRD from hypertension occurs at a faster rate the poorer the blood pressure control. Thus, incident cases of ESRD due to diabetes and hypertension will*

mostly occur in persons who may have already been diagnosed with these diseases. Implementation of currently available strategies to protect the kidney, including glycemic control in diabetics, better control of hypertension in high-risk populations, and use of angiotensin converting enzyme inhibitors offer the best promise for reversing these trends. Secondary prevention efforts may slow the rate of progress of kidney injury in these persons, delaying the need for renal replacement therapy.)

(Baseline: 6,000 cases per year in 1998, DOH)

Risk Reduction Objectives

1. Increase awareness and practice of preventing renal diseases (adequate water intake, balanced diet, personal hygiene, moderate exercise, BP check-up, complete immunizations, management of throat and skin infections, yearly urinalysis) among high risk groups to 80 percent.
   (Baseline data is established in 2000)
2. Increase awareness of the signs and symptoms of kidney disease (e.g., edema, high BP) to 75 percent.
   (Baseline data is established in 2000)
3. Increase the proportion of schoolchildren, adolescents and young adults routinely screened for urinary tract infections, diabetes, and kidney disease to 75 percent.
   (Baseline data is established in 2000)
4. Increase the proportion of diabetic patients who receive annual screening tests for microalbuminuria to 70 percent and those who receive adequate treatment with ACE-inhibitors and low protein diet for the prevention and control of nephropathy to 50 percent.
   (Baseline: less than 10 percent are screened for microalbuminuria in 1998, baseline data on adequate treatment is established in 2000)
5. Increase the proportion of hypertensive individuals screened at the time of initial evaluation for the presence of renal disease (proteinuria, creatinine, BUN) to 80 percent.
   (Baseline data is established in 2000)
6. Increase the proportion of patients with chronic renal disease with optimum blood pressure control of <130/85 to more than 50 percent and the yearly monitoring of renal function (proteinuria, hematuria and serum creatinine) to 60 percent.
   (Baseline data is established in 2000)
7. Reduce the prevalence of ESRD due to chronic glomerulonephritis to 32 percent, chronic pyelonephritis to 11 percent, diabetes nephropathy to 9 percent and hypertensive nephrosclerosis to 2 percent through increased screening, early detection and treatment.
   (Baseline: prevalence of ESRD due to CGN [47 percent], CPN [17 percent], diabetes [13 percent], HPN [three percent] in 1998, RDR

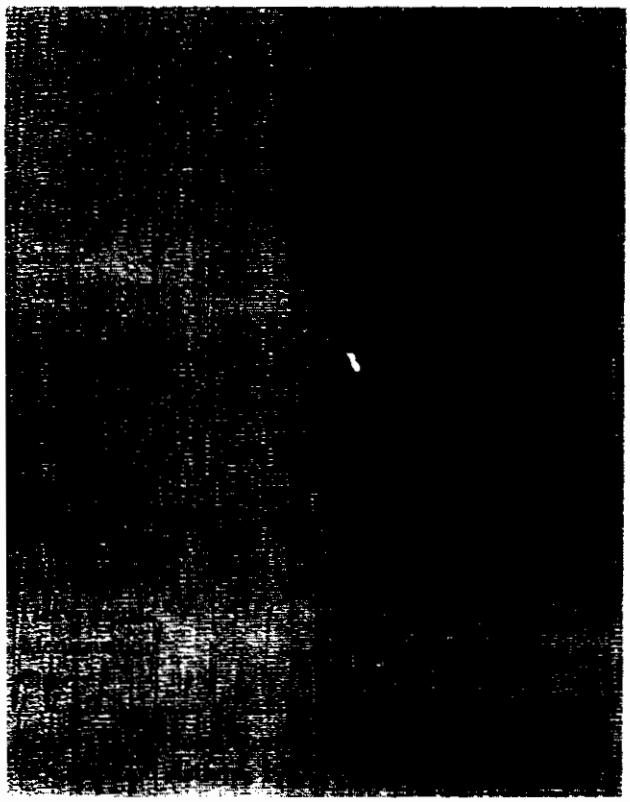
Services and Protection Objectives

1. Increase early referral of abnormal urinary findings to nephrologist for early and adequate management and monitoring to 50 percent.
   (Baseline data is established in 2000)
2. Improve access and median waiting time for renal transplantation.
   (Baseline data is established in 2000)
3. Increase organ donation for renal transplantation to 300 donors a year.
   (Baseline: 7 donors in 1993, NKTI)

4. Increase the proportion of primary care providers who routinely counsel their patients about the effects of chronic health conditions (CGN, diabetes, HPN, family history of genetic diseases) on the development and progression of renal disease to 75 percent.
   (Baseline data is established in 2000)
5. Upgrade the capabilities of regional hospitals and facilities that cater to kidney patients for primary, secondary and tertiary care to 90 percent.
   (Baseline data is established in 2000)

ASTHMA

Asthma is a chronic reactive airway disorder that produces episodic, reversible airway obstruction via bronchospasms, increased mucous secretion, and mucosal edema. Its symptoms range from mild wheezing and dyspnea to life-threatening respiratory failure. Symptoms of bronchial airway obstruction may or may not persist between acute episodes.



Asthma may result from sensitivity to specific external allergens (extrinsic) or from internal, non-allergenic factors (intrinsic). Allergens, which cause extrinsic asthma, include pollen, animal dander, house dust or mold, kapok or feather pillows, food additives containing sulfites, or any other sensitizing substance. Most extrinsic asthma (atopic asthma) begins in children and is usually accompanied by other signs of atopy such as eczema and allergic rhinitis. In intrinsic asthma (non-atopic asthma), no extrinsic substance can be identified. Most cases are preceded by a severe respiratory infection, especially in adults. Irritants, emotional stress, fatigue, endocrine changes, temperature and humidity changes, and exposure to noxious fumes may worsen intrinsic asthma attacks. In many asthmatics, especially children, intrinsic and extrinsic asthma co-exists.

An asthma attack may begin dramatically with simultaneous onset of severe, multiple symptoms, or insidiously, with gradually increasing respiratory distress. Typically, an acute asthmatic attack causes sudden dyspnea, wheezing, tightness in the chest, and cough with thick, clear or yellow sputum. The patient may feel he is suffocating. During a severe attack, he may be unable to speak more than a few words without pausing for breath. Other signs and symptoms such as tachypnea, obvious use of accessory respiratory muscles, rapid pulse, profuse perspiration, hyperresonant lung fields, and diminished breath sounds can be observed. Cyanosis, confusion, and lethargy indicate the onset of life-threatening status asthmaticus and respiratory failure.

Asthma can strike at any age, but half of all cases occur in children under 10. It affects over 10 percent of children and 5-10 percent of adults in many countries, with an estimated 100 million people worldwide suffering from this condition. It has a hereditary predisposition with 64-84 percent of patients reporting a family history of asthma.

The International Study of Asthma and Allergies in Childhood (ISAAC) reported a prevalence of 12 percent in the Philippines or about 8 million Filipinos with asthma (about 1 in 10). The Lung Center of the Philippines survey done in Metro Manila cited in the early 90s, using respondent data from over 1,000 children aged 8-10 years, showed a prevalence of 22 percent current asthmatics with 5 percent laboratory confirmation.

Death rates show a gradual increase worldwide since the early 70s. In western countries, death rates have decreased over the last 5-10 years due to improved asthma management. Data on death rates in the country are not available.

The prevalence of asthma, however, is increasing, especially among children. It is a significant burden today in terms of health care costs, loss of productivity, and reduced participation in family life. It requires a public health approach that stresses disease prevention. Education of patients and their families on reducing exposure to environmental allergens and irritants and the elimination of barriers to access to health care will greatly reduce morbidity and mortality.

National Objectives for Health by 2004

Health Status Objectives

1. Limit the prevalence of asthma to no more than 12 percent.
   (Baseline: 12 percent in the early 90s, ISAAC Study)

Risk Reduction Objectives

1. Increase awareness of patient and family on factors that trigger or precipitate asthma to 30 percent.
   (Baseline data is established in 2000)
2. Increase knowledge of the signs and symptoms of asthma by patients, families and the general public to 50 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Establish baseline data on the prevalence of asthma in the Philippines in 2000.
2. Expand the coverage of asthma clubs in coordination with the National Asthma Movement to 75 percent.
   (Baseline: 25 percent initiated by DOH and NAM in 1994)
3. Operationalize Asthma Education, Prevention and Control Programs in 2000.

OSTEOPOROSIS

Osteoporosis is a condition in which reduction in bone mass per unit volume sufficiently endangers the skeleton, such that fractures may occur on minimal trivial trauma. There are two categories of osteoporosis: primary osteoporosis and secondary osteoporosis. Primary osteoporosis can be divided into three types. Type 1 or postmenopausal osteoporosis, characterized by the disproportionate loss of trabecular bone is linked with fracture at sites rich in cancellous bone such as the vertebral body or distal radius. Type 2 or age-associated osteoporosis which affects all skeletal sites with both cortical and cancellous bone such as the proximal femur, is a result of senile decline in bone mass. The last type is Type 3 or idiopathic osteoporosis which affects pre- menopausal women, middle aged and young men.

Secondary osteoporosis can be caused by identifiable agent such as glucocorticoids or by a disease such as hyperthyroidism or myeloma. Although there are many causes of osteoporosis, the most common is estrogen deficiency in postmenopausal women. Osteoporotic fracture, the major health consequence of estrogen deficiency, may occur at any skeletal site. However, the primary sites are the spine, hip (proximal femur) and distal forearm.

Two factors which affect the probabilities of developing osteoporosis in later life are the peak bone mass and the rate of bone loss during old age. Bone is formed during the early years of life. The maximum amount of bone in the skeleton will be achieved in the early adult years by the age of 18-20. Genetics is the major factor determining the peak bone mass. However, dietary, hormonal and mechanical factors also contribute to peak bone mass. Disorders of these factors may result in a peak bone mass which is less than healthy. The risk in this situation is important because bone substance achieved during early years is consumed as the person advances into old age.

At about the age of 50, bone loss occurs at a rate of 0.5 to 1 percent annually at most bony sites in both sexes. In postmenopausal women, bone loss occurs at a more rapid rate. The rate may be as much as 3-5 percent annually in cancellous (trabecular) bone and 1-3 percent in cortical bone during the early years after the menopause. Although individual patterns of bone loss may vary, the usual pattern is exponential. The rate accelerates in the 5-10 years after menopause and decreases after that. An appropriate total loss of 15 percent of peak bone mass

occurs in the first few postmenopausal years. The lifetime loss may amount to 30-40 percent.

In the study conducted in 1991 at the Philippine Orthopedic Center of 22,422 female admissions, 6,745 female patients admitted for fractures were 50 years old and above and 4,272 or 62.9 percent of these were fractures secondary to osteoporosis (*Tomas YP et al*). Sixty-two percent were femoral fractures, 13 percent forearm fractures, vertebral and hip fractures were 12 and 17 percent respectively. A similar study at the Southern Island Medical Center from 1981to 1999 showed the incidence of fractures as highest between 50-79 years old with the femur as the most commonly affected site (*Maruoto et al*).

Prevention is the most effective approach to osteoporosis. This may be done by optimizing peak bone mass at skeletal maturity, preventing bone loss or restoring the bone mineral and architecture in osteoporotic bone. Peak bone mass is mainly under genetic control. However, during growth the amount of bone tissue deposited within the skeleton may be modified by diet, lifestyle or the presence of chronic disease. Bone mass at skeletal maturity can be improved by ensuring a reasonable intake of calcium, protein, carbohydrates, fat and other nutrients. Exercise and abstinence from tobacco, alcohol and drugs are also good for the skeleton as it is for the whole body.

Calcium is significant for creating optimum bone mass, for both skeletal development during childhood and adolescence and for maintenance of a high bone quality in adults. Postmenopausal women should increase their calcium intake to 1,000–1500 mg. a day. Calcium is a nutrient that should be obtained from dietary sources. However, a supplement may be used if dietary calcium is inadequate.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the prevalence of osteoporosis.
   (Baseline is established in 2000)
2. Reduce the incidence of fractures due to osteoporosis by 10 percent.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase the awareness on the importance of a balance diet to prevent osteoporosis.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Determine the prevalence of osteoporosis among men and women.
   (Baseline data is established in 2000)
2. Develop and implement a comprehensive information, education and communication plan for osteoporosis in 2000.

MENTAL HEALTH AND MENTAL DISORDERS

WHO defines mental health as a state of well-being where a person can realize his or her own abilities, to cope with the normal stresses of life and work productively. Mental ill health is a disturbance in a person's thoughts, feelings and behavior. It affects and is affected by a person's interaction with others, one's environment, and even one's self-esteem. Mental disorder is a medically diagnosable illness that results in significant impairment of one's cognitive, affective or relational abilities and is equivalent to mental illness. Mental health problems have four facets as a public health burden. These are the defined burden, undefined burden, hidden burden and future burden.

Defined burden refers to the burden currently affecting persons with mental disorders and is measured in terms of prevalence and other indicators such as the quality of life indicators and disability adjusted life years (DALY).

Undefined burden is the portion of the burden relating to the impact of mental health problems to persons other than the individual directly affected. Repercussions of undefined burden are felt heavily by families and communities both in human and economic loss. Mental illness affects the person's functioning and thinking processes, greatly diminishing a person's social role and productivity in the community. Mental illness is disabling and lasts for many years. It puts a tremendous burden on the emotional and socioeconomic capabilities of relatives who care for the patient, especially when the health system cannot offer treatment and support at an early stage.

Hidden burden of mental illness refers to the stigma and violations of human rights. Stigma is a mark of shame, disgrace or disapproval that results in a person being shunned or rejected by others. The stigma associated with all forms of mental illness is strong but generally increases the more a person's behavior differs from that of the norm.

Future burden refers to the burden in the future resulting from the aging of the population, increasing social problems and unrest inherited from the existing burden.

Mental health covers the psychosocial concerns of daily living covering the stages of life: from the womb to a newborn, an infant, a preschooler, a child, an adolescent, a young adult, middle age, late adult, and elderly until death.

By the 18th week, the fetus reacts to various stimuli passing the amniotic sac such as sound (music and noise) and substances (drugs and alcohol). In infancy, the psychosocial and cognitive development is greatly affected by the presence or absence of the mother or primary caretaker. Trust versus mistrust is the first crisis that the infant must face. Consistent mothering is important at this stage. Particular importance should be given to mothers living in conditions of stress and social adversity.

The psychosocial development of a toddler is greatly affected by motor and intellectual development. At this stage, the child learns to master locomotion and impulses. The crisis at this stage concerns asserting independence against shame and doubt. The need for control and firmness on the part of the caretaker is important at this stage. Negative exposure and punishment may cause shame and develop self-doubt on the child.

At preschool age, the child can express complex emotions: love, unhappiness, jealousy and envy which are influenced by hunger and tiredness. Preschoolers are aware of their bodies, the genitalia and gender differences. They develop concept of what they want and what they need. This later lead to choices between desire, the need to grow outside the homes and what parents restrict, and turning parental values into self-regulating mechanisms (obedience, guidance and punishment). The important milestone at this stage is the development of conscience. Conscience gives the child a concept of what is right and what is wrong.

During school age, education plays a big role in facilitating the child's well-being and healthy social and emotional growth. School-age children should be taught skills to improve their psychosocial competency. The different skills should include problem solving, critical thinking, communication, interpersonal skills and such character traits as empathy and coping with emotions. These skills would enable children and adolescents to develop sound and positive mental health.

In adolescence, the psychosocial concerns are the acceleration of cognitive development, consolidation of personality formation and development of morals.

During the adult period, the human being is at a very productive stage. A very important mental health concern is workplace-related stress. Special emphasis should be given to aspects of work process that promote mental health

The elderly is a growing population. An aging population is the result of increased life expectancy as a consequence of improved quality of life. For aging to be a positive experience, the elderly must be able to live their life at full potential. A healthy older person is a resource for the family, community and the economy.

Concerns of daily living include psychological consequences and suffering brought about by migration, urbanization, industrialization, economic policies, political confusion, poverty and abuses. Victims of disaster, violence and armed conflict, OFW's and children in difficult circumstances are exposed to depressive life experiences normally not experienced by the majority of the population. Their distressing experiences make them nonproductive and susceptible to ill health, and if not properly managed, develop into mental illness.

International data show that about one percent of the population is affected with severe mental and

neurological disorders, and another 4-5 percent suffers from mild to moderate neurological problems, including the abuse of alcohol and drugs.

Local studies on mental disorders showed contrasting results. In a baseline survey in 1964-67 in Sta. Cruz, Lubao, Pampanga, Manapsal of the DOH Division of Mental Hygiene, Bureau of Disease Control, found that the prevalence of mental disorders was 36 per 1,000 adults, children and adolescents.

The 1980 WHO Collaborative Studies for Extending Mental Health Care in General Health Care Services (involving seven countries) showed that 17 percent of adults and 16 percent of children who consulted at three health centers in Sampaloc, Manila, have mental disorders. Depressive reactions in adults and adaptation reaction in children were most frequently found. In Sapang Palay, San Jose Del Monte, Bulacan, the prevalence of adult schizophrenia was 12 cases per 1,000 population in 1988-89 (*Manalang et al*).

In Region 6 (Iloilo, Negros Occidental and Antique), Perlas et al. in 1993-94 showed that the prevalence of the following mental illness in the adult population were: psychosis (4.3 percent), anxiety (14.3 percent), panic (5.6 percent). For the children and adolescent, the top five most prevalent psychiatric conditions were: enuresis (9.3 percent), speech and language disorder (3.9 percent), mental subnormality (3.7 percent), adaptation reaction (2.4 percent) and neurotic disorder (1.1 percent).

The current DOH bed capacity for mental disorders is 5,465. Of these, 4,200 beds are in the NCR (at the National Center for Mental Health). The rest of the country share the remaining 1,265 beds (CAR-40 beds, Region 2-200 beds, Region 3-500 beds, Region 11-200 beds). Regions 1, 4, 10, 12, CARAGA and ARMM do not have inpatient psychiatric facilities. Only 27 DOH medical centers and regional hospitals have mental health services. Cavite is the only province with a psychiatric facility.

Efforts to train general practitioners in the community have been done by the government through the National Mental Health program in regional health offices, regional hospitals and medical centers, the National Center for Mental Health and the UP-PGH Department of Psychiatry. Other participants to the program are the NGOs, civic and specialty organizations represented by the Philippine Mental Health Association, UPPFI and Philippine Psychiatric Association. However, there are no coherent efforts to rationalize these activities.

The magnitude of mental ill health and disorders is broad, and government resources are limited. Within the health sector, mental health has to compete for resources against other equally important health concerns.

Goals: Mental health is promoted and health-related effects of stressful lifestyle is mitigated. The prevalence of mental ill health and disorders in the Philippines is reduced.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce by 1 percent the prevalence of mental health problems: major depressive disorders, schizophrenia, alcohol and drug abuse.
   (Baseline data is established in 2000)
2. Reduce by 5 percent the members of the workforce who have experienced adverse life experiences as consequences of stress in the workplace. (Special target group: government employees).
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase the proportion of high-risk population (victims of violence and disaster, OFWs, children in extremely difficult circumstances and adolescents) who seeks help for personal and emotional problems.
   (Baseline data is established in 2000)
2. Increase the proportion of members of the workforce who avail of stress management services. (Special target group: government employees)
   (Baseline data is established in 2000)
3. Increase the proportion of children who avail of psychological stimulation and assessment for mental health.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Establish new and upgrade existing mental health facilities.
   (Baseline data is established in 2000)
2. Upgrade existing competencies on mental health for mental health professionals and health care providers.
   (Baseline data is established in 2000)
3. Increase the percentage of health facilities, workplaces and communities that provide mental health services.
   (Baseline data is established in 2000)
4. Develop self-help and family care programs.
   (Baseline data is established in 2000)
5. Increase the capability of health facilities for psychosocial assessment and screening of mental disorders.
   (Baseline data is established in 2000)

DIET AND NUTRITIONAL DISORDERS

Good nutrition contributes to the development of physical and mental potential. It also prevents acute and chronic illnesses. Although the range of good nutrition varies, excesses of nutrients or calories may prove to be as undesirable as nutritional deficiencies. Nutritional deficiencies affect all age groups and socioeconomic status but are more significant among children of poor families. Obesity, a form of nutritional excess is more common among higher income groups.

The 1993 National Nutrition Survey (NNS) conducted by the FNRI using the food weighing technique, revealed that the rice-vegetable-fish diet pattern of Filipinos has remained nutritionally inadequate in quantity and quality. The Filipino diet varies in terms of types of food, and generally, the amounts consumed were insufficient to provide adequate level of essential nutrients.

The survey showed that the consumption of rice and rice products among Filipinos amounted to an average of 282 grams per capita per day (about 103 kilograms per capita per year). As the country's staple food, rice made up more than one-third (35.1 percent) of total food consumption of 803 grams (raw food, as purchased weight). Consumption of fish and fish products amounted to 99 grams per capita per day while consumption of meat and meat products including poultry was half of this amount at 48 grams per capita per day.

There were large differences in nutrient intake across rural-urban regions. Among rural households, the major foods consumed were primarily of plant origin. Rural diet was noted to be high in carbohydrates, low in fat and with just about enough proportion of protein. Urban diet was more adequate than the rural diet in all the nutrients considered except for energy and ascorbic acid. Urban households were noted to be heavy consumers of the so called "prestige foods" such as milk and milk products. The amount of these food items consumed in urban areas was two times greater than in rural areas. Of the essential nutrients needed everyday, only protein, on the average met the recommended allowances. Mean intake was 49.9 grams per capita per day, which was 106.2 percent adequate.

A different picture emerged in another study conducted in 1995 among urban poor households by the DOH Urban Health and Nutrition Project (UHNP). The study showed that urban poor households thrived on carbohydrates-rich food with low consumption of meat, eggs and dairy foods. This implied low intake of dietary protein. The study revealed that consumption of fruits was

very low and 17 percent of families did not eat vegetables regularly. The 1993 NNS also revealed that intake of vegetables declined from 1978 to 1993.

In the Philippines as in most developing countries, the malnutrition problem is more of deficiency rather than excess. Nutritional deficiencies are widespread and recognized as national problems. The most common nutritional deficiencies are protein energy malnutrition (PEM), vitamin A deficiency (VAD), iron deficiency anemia (IDA), and iodine deficiency disorders (IDD).

In recent years, obesity is increasing among Filipinos and may become a major public health problem. It often leads to hypertension, cardiovascular diseases and diabetes and is also linked with cancer.

The results of several studies show that there is a need to improve the quality and quantity of food that Filipinos eat especially the children. Several factors affect the eating habits of Filipinos such as increasing proportion of mothers or caregivers who work outside their home, imitation of western food habits and the establishment of several fast food chains, rise of street food vendors, *carinderias* and *turo-turo* stores.

Rapid urbanization and changing lifestyle brought about an increased intake of animal fats and cholesterol, high caloric foods, refined sugar and less nutritious foods, while foods high in fiber such as vegetables and fruits are often neglected. The result is an increasing incidence of obesity, diabetes, CVD, cancer, stroke and gall bladder diseases.

Protein Energy Malnutrition (PEM)

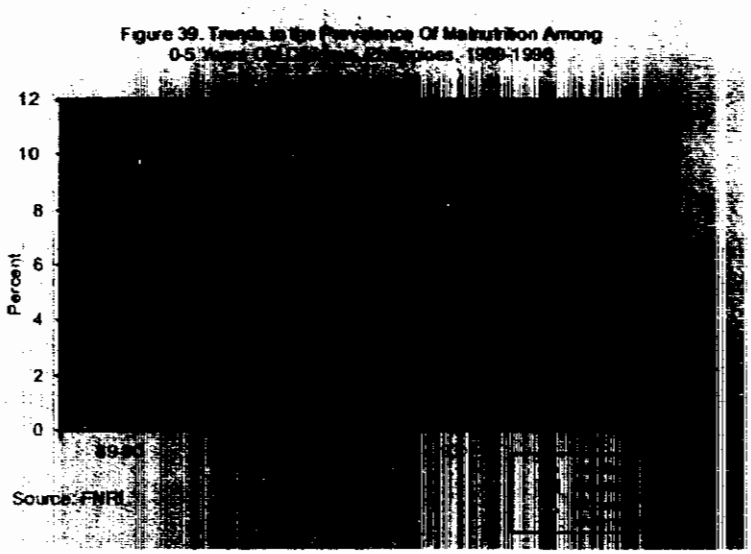
PEM is a spectrum of diseases arising from a diet that is poor in protein and calories, especially in children under five. It is the most widespread form of malnutrition in the developing world, manifesting in two forms, marasmus and kwashiorkor.

Marasmus stems from an inadequate calorie intake due to insufficient diet, improper feeding habits, metabolic abnormalities or congenital malformations. The result of these conditions is failure to gain weight, followed by loss of weight until emaciation occurs. Influences that predispose a person to marasmus are rapid succession of pregnancies, early and abrupt weaning followed by dirty and unsound artificial feeding practices such as giving of diluted or inadequate amount of milk.

Kwashiorkor is due to deprivation of sufficient quality of protein foods, impaired absorption of protein, or abnormal losses of protein from the body. Kwashiorkor arises when the child is suddenly switched from breastmilk containing high quality protein that supports growth to watery cereal or weak formula of low protein quality. A child with kwashiorkor often develops a fatty liver. Antibodies to fight off invading bacteria are degraded, and the child becomes an easy target for infection. Infections deplete the nutrients in the body.

Children who are thin for their height may be suffering from acute PEM (recent severe food restriction) resulting in wasting, whereas children who are short for their age may be experiencing chronic PEM (long-term food restriction) resulting in stunting. Stunted growth may be the most common sign of malnutrition in developing countries, but it is easy to overlook because a small child can look perfectly normal.

The nutrition situation shows the continued existence of PEM. However, there is a decreasing trend in the prevalence of malnutrition among 0-5 year



old children as shown in the 1989-96 NNS. The 1996 FNRI survey showed that 8.4 percent of preschoolers are at least moderately and severely underweight. Severe and moderate stunting is observed in 5.1 percent while wasting afflicts 4.6 percent of preschoolers. Among preschoolers aged 1-2 years old, underweight and stunting is still a problem with a prevalence rate of 7.2 percent and 6.6 percent, respectively.

Among children 6-10 years old, 7.4 percent are at least moderately and severely underweight, 5.5 percent malnourished in the past, chronically malnourished or stunted, and 6.6 percent acutely malnourished or wasted. Generally, there is a declining trend in the various forms of malnutrition among 0-3 and 6-10 year old children, except the underweight prevalence among preschoolers which showed a 0.2 percent increase.

The declining trend for 0-3 years old must be taken with caution since the Filipino standard was used instead of the International Reference Standard

where genetic factor has no or minimal effect for this age group.

Vitamin A Deficiency (VAD)

Depleted liver stores and low blood levels of vitamin A characterize VAD, resulting primarily from deficient dietary intake and secondarily from poor absorption and use of the vitamin.

Vitamin A plays an important role in maintaining healthy epithelial tissues which prevent the invasion of bacteria and viruses. When Vitamin A is deficient, epithelial tissues lose their integrity and become defenseless against infection. Mucous secretion in the stomach and intestines diminishes thereby hindering normal digestion and absorption of nutrients and indirectly worsening the deficiency.

In the eye, the cornea becomes dry and hard. Further changes may progress to permanent blindness. Xerophthalmia is the term that describes all the eye signs of VAD if it reaches a critically low level. VAD is the major cause of childhood blindness in the world, destroying the vision of a quarter of a million preschoolers each year in Asia alone.

In addition, more than five million children worldwide endure less severe forms of vitamin A deficiency. Infections of the respiratory tract, the gastrointestinal tract and possibly the inner ear are likelier to occur with VAD. Tooth growth may also be abnormal because vitamin A is needed to lay the foundation for enamel. Because the growth and development of the brain and eyes are most rapid in the fetus and the very young infant, the

effects of VAD are most severe during pregnancy and around the time of birth.

Studies have shown that young children deficient in vitamin A have a higher death rate. About 23 percent of deaths among young children aged six months to five years can be averted if vitamin A status is improved. Studies in three countries showed that giving large doses of vitamin A on admission for severe measles reduced the case fatality by one-half.

In the Philippines, an estimated 17 children go blind each day from serious VAD. The vision of tens of thousands more are either temporarily or permanently impaired. The 1993 NNS conducted by FNRI showed a decrease in the prevalence of nightblindness and Bitot's spot compared with a similar survey conducted in 1987. The 1993 survey showed that four out of 1,000 preschoolers aged six months to six years (0.4 percent) were afflicted with nightblindness while one out of 1,000 preschoolers (0.1 percent) had Bitot's spot.

The 1993 survey further showed that the prevalence of deficient serum retinol levels among children six months to six years old exceeded the acceptable level, making VAD a significant public health problem. A child is considered deficient in vitamin A if the serum retinol level is less than five micrograms per deciliter of plasma. The survey also showed the prevalence of nightblindness among women on their second and third trimester of pregnancy (7.2 percent) and among women of childbearing age (9.7 percent).

Eleven of the 15 regions surveyed in 1993 have a VAD prevalence rate of above 5 percent. Regions 1 and 9 have rates over 20 percent while NCR, CAR, Regions 3,4 and 5 have rates above 10 percent. These are the regions where VAD is a major public health problem.

Iron Deficiency Anemia (IDA)

Iron deficiency is the most common cause of nutritional anemia in the Philippines. IDA refers to

severe lack of iron stores in the body, resulting in low hemoglobin concentration. It is the most widespread micronutrient deficiency affecting the general health and well-being, reproductive performance and work capacity of a person. Women of childbearing age, especially pregnant women, have the greatest risk of IDA. Other high-risk groups include infants, preschoolers, adolescents and older adults.

The cause of iron deficiency is usually inadequate iron intake either from lack of food or from consumption of the wrong foods. Among non-nutritional causes of IDA, blood loss is the most common, especially among women. Around 80 percent of the iron in the body are in the blood. Therefore, iron loss is great whenever blood is lost. Menstruation causes iron loss, making a woman's need for iron greater than that of a man.

Iron stores dwindle during pregnancy, and iron losses occur with the blood loss during birth. The developing fetus draws on maternal iron stores to create stores of its own to last through the first three to six months of life. This drain on the mother's iron supply may cause a deficiency. Fetal deaths, prematurity and low birth weight occur more frequently when maternal iron status is poor.

Among infants, IDA commonly starts to develop after the age of six months if complementary feeding does not provide sufficient absorbable iron. The deficiency is common among infants in whom the rate of growth is high and whose diet is dominated by milk that contains little iron. After the age of six months, infants fed with breast milk substitute are vulnerable to IDA because cow's milk is a poor source of iron compared to human milk.

Among school children, the most common cause of anemia other than nutritional deficiency is intestinal parasitism, particularly infection with hookworm. Each worm may ingest 0.03 to 0.15 ml of blood daily. A person with heavy infection would sustain heavy blood loss that leads to anemia. An attack of malaria fever, especially when due to *Plasmodium falciparum*, is always accompanied by hemolysis, and in severe and prolonged attack, anemia may ensue. Demands for iron greatly increase due to urinary or intestinal blood loss caused by schistosomiasis.

In the NNS conducted by FNRI, the national prevalence rate of anemia decreased from 37.4 percent in 1987 to 28.9 percent in 1993. Infants, pregnant and lactating women and the elderly were the most commonly affected groups. The prevalence rate of anemia among pregnant women is 43.6 percent in 1993. Among the regions, CAR has the highest prevalence rate of anemia among pregnant women at 63.7 percent, followed by ARMM at 62.6 percent and Region 12 at 57.5 percent.

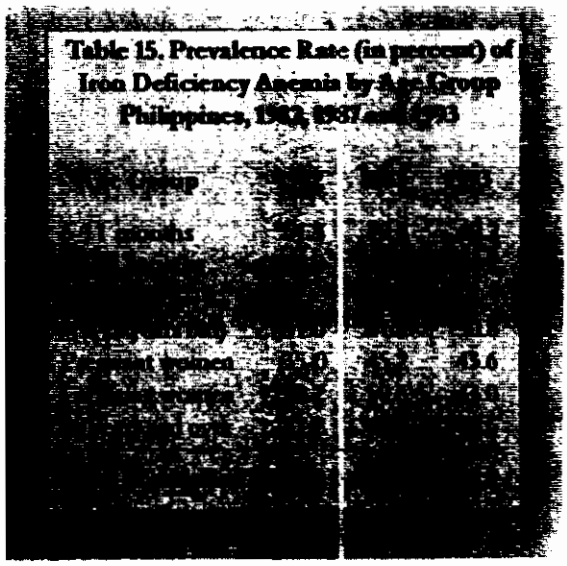


Table 15. Prevalence Rate (in percent) of Iron Deficiency Anemia by Age Group Philippines, 1982, 1987 and 1993

Age Group			
6-11 months	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	43.6

The prevalence rate of anemia among infants aged six months to one year decreased from 70.4 percent in 1987 to 49.2 percent in 1993. Among the regions, Region 9 has the highest prevalence rate of anemia among infants (86.7 percent), followed by Region 12 (82.7 percent) and Region 10 (61.7 percent). Among school children, the prevalence rate of anemia in 1993 is 30.8 percent. Region 5 has the highest prevalence rate of anemia among school children (43.4 percent) followed by Region 1 (41.4 percent) and ARMM (41.1 percent).

Iodine Deficiency Disorders (IDD)

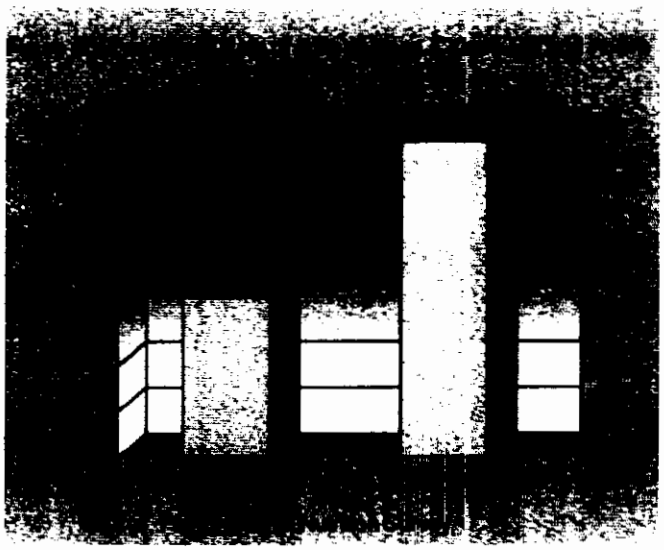
Iodine is an integral part of the thyroid hormone called thyroxin, the hormone responsible for regulating the basal metabolism of the body. Dietary iodine deficiency leads to thyroid enlargement, known as goiter, due to the increase in size and number of the epithelial cells in the gland. Females are more commonly affected with goiter than males. Thyroid enlargement coincides with puberty and the reproductive years in females.

IDD among women of childbearing age are the most common preventable causes of life-long mental and physical retardation in the fetus and infant known as cretinism. Mental retardation can be averted if the pregnant woman's deficiency is detected and treated early.

The dietary lack of iodine may be due to environmental factors such as deficient iodine content in soil and water. High mineral contents, particularly of magnesium, calcium in drinking water and bacterial contaminants such as *E. coli* organisms have been pointed out as goitrogenic factors. Other causes of iodine deficiency are conditions that make dietary iodine unavailable for the body to absorb and conditions that increase the iodine requirement such as chronic infections.

The 1993 NNS conducted by FNRI showed the prevalence rate of goiter among Filipinos at 6.9 percent. It was highest in Region 5 (8.6 percent), followed by Region 7 (7.8 percent), NCR (7.0 percent), CAR (6.9 percent), and Region 4 (6.1 percent). Comparing the survey result with the WHO standard cutoff point of 5 percent prevalence rate, iodine deficiency is considered a public health problem in the Philippines.

The prevalence rate of goiter is highest among young pregnant women aged 13-20 years (26.5 percent) and among lactating women in the same age group (24.1 percent). The prevalence rate is 23.4 among pregnant women aged 21-49 years and 18.1 percent among lactating women in the same age group. The survey noted that the prevalence of goiter is higher among urban (5.1 percent) than rural subjects (4.6 percent).



In 1987, examinations done on 371,615 school children aged 7-17 years showed that the highest prevalence rate of goiter is in Region 2 at 14.6 percent, with the provinces of Kalinga-Apayao, Ifugao and Quirino having prevalence rates of 40.2 percent. The survey also showed that 43,254 school children suffer from IDD while 210,564 school children live in endemic areas and are at risk of developing the disease.

Obesity

Obesity occurs when the calorie intake exceeds the body's energy requirement for physical activity and growth. As a result, fat accumulates and is stored as adipose tissue. Although it is the simplest index of obesity, body weight does not always reflect the relative proportion of adipose tissue in the body. Weight adjusted to body size is a better sign than body weight alone. For common use, obesity is actual body weight equivalent to 21 percent or more over the desirable body weight.

The location of fat in the body may be more serious than the total amount of body fat. Fat around the abdomen, most common among males, may represent a greater risk to health than fat elsewhere on the body. Abdominal fat, even in the absence of obesity, is associated with hypertension, heart disease and diabetes. In contrast, fat around the hips and thighs, most common among females, seems relatively harmless. If weight loss is to benefit health, it should reduce upper body fat.

The consequences of obesity lead to various clinical manifestations and predispose people to common diseases. Every major organ system appears involved. In the cardiovascular system, obesity is linked with hypertension, high blood cholesterol, and varicose veins. Obesity is also the single important factor associated with the development of diabetes mellitus. Other diseases or conditions associated with obesity are abdominal hernias, arthritis, respiratory difficulty and surgical complications.

In obese men, there is higher risk of developing cancer of the colon, rectum and prostate gland. For women, there is greater risk of menstrual irregularities, pregnancy-induced hypertension, and cancer of the breast, uterus, ovaries, gall bladder and bile duct. The more obese, the higher the death rate, especially in the young. Insurance companies have reported that fat people die younger from many causes. Even after the effects of diagnosed diseases are discounted, the risk of death remains twofold for obese people, especially for those with lifelong weight problem.

Beyond all these are more risks linked with ill-advised or misguided dieting done by millions of obese people throughout much of their lives. Some fad diets taken to control obesity are more dangerous to health than obesity itself.

Obesity is a severe physical handicap, but it is reversible. Prevention is the most desirable strategy, but where it has failed, treatment is needed. The most common treatment is reducing calorie intake through restricted diet and increasing calorie expenditure through increased exercise. Drugs like appetite suppressant are of limited use and their effects are transient. Surgery is a radical form of treatment but may bring some complications.

In the Philippines, data from the DOH *Operation Timbang* showed that there is an increasing trend of overweight among children below seven years.

In 1992 the overweight prevalence rate among this age group is 6.56 percent. However, in the 1993 NNS by FNRI, the overweight prevalence rate is 5.1 percent.

In the adult population aged 20 years and above, the overweight prevalence rate is 12.7 percent. More females were overweight (15.2 percent) and obese (3.5 percent) compared to males. Further, women are more prone to obesity starting at age 40. Obesity among them is highest between the ages of 45-55 years (9.3 percent) and lowest at age 70 years and above (0.4 percent). Obesity in pregnant women is often linked with gestational diabetes, hypertension and infections after delivery.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the prevalence rate of protein-energy malnutrition

2. Reduce the prevalence rate of vitamin A deficiency.

Special Target Population	1993 Baseline (FNRI)	2004 Targets
Preschoolers (6 months – 6 years old)	0.4%	0%
Women and mothers		
a. Pregnant	0.5%	0.2%
b. Lactating	1.0%	0.3%

3. Reduce the prevalence rate of iron deficiency anemia.

[illegible]	1993 Baseline (FNRI)	2004 Targets
[illegible]	[illegible]	[illegible]

4. Reduce the prevalence rate of iodine deficiency disorders (IDD).

[illegible]	1993 Baseline (FNRI)	2004 Targets
[illegible]	[illegible]	[illegible]

5. Reduce the prevalence rate of overweight and obese among the population.

Special Target Population	1993 Baseline (FNRI)	2004 Targets
Preschoolers (0- 6 years old)	6.5%	5.3%
Adults (20 years old and over)		
a. Males	14.3%	12.3%
b. Females	18.6%	16.6%

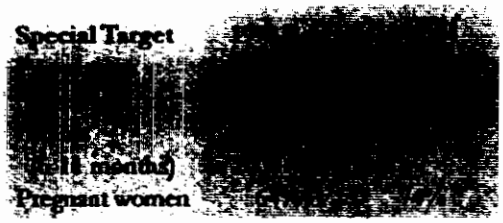
Risk Reduction Objectives

1. Increase the proportion of infants exclusively breastfed up to six months of age to 30 percent. (Baseline: 20 percent in 1998, NDHS)
2. Increase the proportion of infants given complementary foods at about six months to 70 percent. (Baseline: 60.9 percent in 1998, NDHS)
3. Increase the proportion of mothers or caregivers taking their children to weighing posts, mothercraft centers or health facilities for growth monitoring. (Baseline data is established in 2000)
4. Increase the pecentage of individuals practicing healthy diet to 50 percent. (Baseline : 30.7 percent in 1995, Exploratory Survey on Healthy Diet)
5. Reduce the percentage of individuals eating junk foods to 50 percent. (Baseline: 81.3 peercent in 1995, Exploratory Survey on Healthy Diet)
6. Reduce the percentage of individuals eating fast foods to 65 percent. (Baseline: 79.3 percent in 1995, Exploratory Survey on Healthy Diet)
7. Increase the percentage of individuals consuming green leafy and yellow vegetables to 100 percent. (Baseline: 87.6 percent in 1995, Exploratory Survey on Healthy Diet)

8. Increase the percentage of individuals consuming food rich in protein, vitamin A, iron, and iodine.
   (Baseline data is established in 2000)
9. Increase the availability and use of fortified food products with Sangkap Pinoy seal.
   (Baseline data is established in 2000)
10. Achieve 100 percent universal salt iodization.
    (Baseline: 10 percent in 1998, NS Report)
11. Increase the level of awareness on healthy diet and maintenance of desirable body weight.
    (Baseline data is established in 2000)
12. Increase the proportion of overweight and obese seeking dietary counseling and practicing prescribed diet restriction.
    (Baseline data is established in 2000)
13. Increase the level of awareness on food safety.
    (Baseline data is established in 2000)

Services and Protection Objectives

1. Institutionalize "nutri-clinic" as part of health facilities.
   (Baseline data is established in 2000)
2. Increase the proportion of moderately and severely underweight children without medical complications rehabilitated at mothercraft centers or weighing posts to 15 percent.
   (Baseline: 10.7 percent in 1997, FHSIS
3. Increase the proportion of severely underweight children with medical complications referred to hospitals or nutri-wards to 25 percent.
   (Baseline: 14.2 percent in 1997, FHSIS-
4. Increase the coverage of iron supplementation



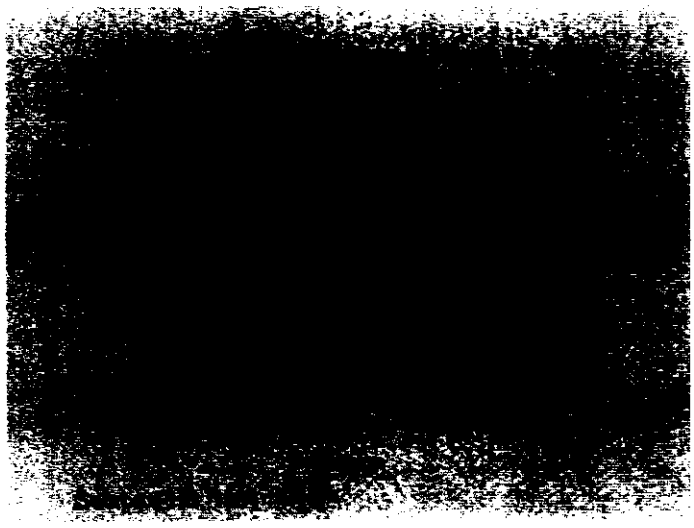
5. Increase the coverage of vitamin A supplementation among 12- to 59-month-old children to 100 percent.
   (Baseline: 90 percent in 1998, FETP Survey)

ACCIDENTS AND INJURIES

Over the years the Philippines emerged as one of the economically active nations in Southeast Asia. The improvement in the economy brought industrialization and urbanization that in turn change the people's lifestyle as well as the pattern of disease occurrence. As roads, highways and bridges are built at a rapid pace, incidence of fatal vehicular accidents also increases. Stress, social problems, violence, pollution, and the increase in economic activity resulted in innumerable injuries both intentional and unintentional.

Accidents consistently remain one of the leading causes of morbidity and mortality in the country. In 1994 there were 211,288 recorded accidents with a rate of 307.9 cases per 100,000 population, making it the fifth leading cause of morbidity. The highest rates of accidents were recorded in Regions 2, 3 and 12. Among the provinces, Nueva Vizcaya, Batanes, Bataan, Cagayan, and Agusan del Norte recorded the highest rates of accidents.

There were 14,752 deaths caused by accidents in 1994 with a death rate of 21.5 deaths per 100,000 population, making it the sixth leading cause of death. The figure is higher than the five-year (1989-93) average of 16.2 deaths per 100,000 population. Deaths caused by accident contributed 4.6 percent of the total deaths. Of these deaths from accident, health professionals attended only 44.2 percent. Morbidity and mortality from accidents and injuries increased in the last two decades.



Motor vehicle accidents (6.1 deaths per 100,000); submersion, suffocation, and foreign bodies (3.7 per 100,000); intracranial injury (2.5 per 100,000); fractures, dislocations, sprains and strains (1.9 per 1,000 population) and accidental falls (1.4 per 100,000) were the most common causes of deaths from accident in 1994. Homicide or injuries purposely inflicted by other persons was 17.5 deaths per 100,000 population.

Deaths from suicide or self-inflicted injuries were 1.8 per 100,000 population. Deaths from accidents and injuries were more common among males.

Among pre-school children (0-4 years old), the leading cause of accidental death is submersion, suffocation or foreign bodies. Among school age children (5-14 years old), the leading cause is vehicular motor accident. Homicide and other injuries purposely inflicted by other persons were the leading causes among youths and adults followed by vehicular motor accident. Accidental falls, fractures and dislocations are the more common causes among older adults aged 70 years and older.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the incidence of accidents and injuries to 300 cases per 100,000 population.
   (Baseline: 307.9 per 100,000 in 1994, PHS)
2. Reduce the mortality rate from accidents and injuries to 20 deaths per 100,000 population.
   (Baseline: 21.5 per 100,000 in 1994, PHS)

Risk Reduction Objectives

1. Increase the use of safety belts among motor vehicle occupants by at least 75 percent.
   (Baseline data is established in 2000)
2. Increase the use of helmets among motorcyclists by at least 50 percent.
   (Baseline data is established in 2000)
3. Encourage the use of protective gears among cyclists and skaters by at least 50 percent.
   (Baseline data is established in 2000)
4. Reduce the use of firecrackers during festivities by at least 50 percent.
   (Baseline data is established in 2000)
5. Increase the level of awareness on common causes and preventive measures of accidents and injuries to 50 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the number of regional hospitals and medical centers with Burn and Trauma Unit.
   (Baseline data is established in 2000)
2. Develop and institutionalize the Injury Prevention and Control program and surveillance network in all regional and provincial health facilities.
   (Baseline: 0 in 1999, DOH)
3. Develop and disseminate information campaign materials on injury prevention and control
   (Baseline: 0 in 1999, DOH)
4. Increase the number of surgeons in regional hospitals and medical centers trained on burn and trauma management.
   (Baseline data is established in 2000)
5. Increase the number of regional health personnel trained on the epidemiology, prevention and control of accidents and injuries
   (Baseline data is established in 2000)

4
NATIONAL OBJECTIVES FOR HEALTH: HEALTH PROMOTION AND PROTECTION

Health promotion is complementary to disease prevention. It is the first step to disease prevention and starts with people who are basically healthy by enhancing positive behaviors that promote well-being and strengthening community measures and individual lifestyles for the maintenance of good health. It is also concerned with reducing, preventing or controlling negative behaviors or lifestyle that increase the risk to illness or certain forms of diseases.

Health promotion to be more effective, should begin from conception and continue to old age. The programmatic approach to family health uses the life cycle approach which covers the stages of life – from the womb to newborn, infancy, childhood, adolescence, adulthood and old age. This approach is calculated to provide the most appropriate package of health services at each stage of life to ensure the state of well-being of all age groups. The cumulative impact of positive personal behaviors and practices started in childhood and maintained through adulthood and old age is made apparent on the length and quality of a person's life. Health seeking practices and positive personal habits acquired early in life are the best protection against diseases and illnesses.

Better economic opportunities and adverse environmental impact follow on the heels of development. The first improves income opportunity and fuels the government's capacity to provide more services to the people. Adverse environmental changes on the other hand, pose serious health consequences that put people and communities at risk. The presence of hazardous materials and technology in the workplace has contributed significantly to the alarming rise of certain work-related diseases. Dislocation of poor people to give way to factories and economic zones has pushed them to inner spaces and inadequate shelter bereft of basic life giving resources. Food security is equally threatened by irrational land utilization and conversion.

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Truly, in the last decades before 2000, adverse environmental conditions have invaded households, communities, industries and workplaces and have become major threats to public health. In such conditions, promoting the health and protecting the well-being of the population becomes an urgent matter and should include strong advocacy for cleaner technology or less polluting and hazardous industrial and manufacturing processes; development of more people-friendly habitats and communities; education to stop people from carelessly throwing wastes and polluting the environment; and more enlightened trade, tourism, investment and industrial and health policies along the framework of sustainable development.

Education and information programs should also be developed to create a more health-informed population that can best deal with health-related problems and advocate for better and more responsive health policies.

Health promotion cost less and may be initiated by the individual or community with minimum effort and resources. Health promotion include any form of physical activities (e.g., household chores, brisk walking, dance, sports and play exercise) done regularly to strengthen cardiovascular fitness, improve physical endurance and prolong life. A less stressful lifestyle free from the harmful effects of drugs and alcohol and peaceful surroundings promote sound minds not inclined to violence and abusive behavior. A healthy outlook in life prevents violence and its often fatal consequences that put undue burden on the health care system. Maintaining cleanliness of the body is a protection against diseases and poor health. Non-smoking of tobacco prolongs life and prevents fatal respiratory and cardiovascular diseases. Discipline with regard to diet, sleep, exercise and abstinence from alcohol and tobacco is a personal choice that should be cultivated and encouraged. In the long run, the individual's sense of responsibility towards his own health is the key to whether he will have a full, productive long life.

FAMILY HEALTH AND HEALTH OF SPECIAL POPULATIONS

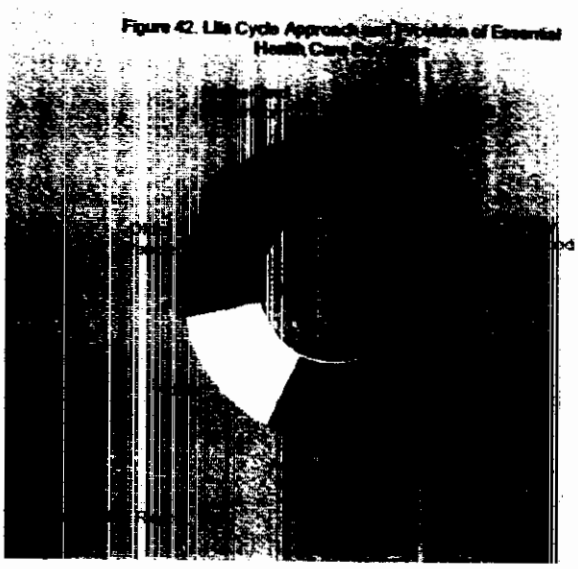
The basic unit of Philippine society is the family. In Filipino culture, this is made up of the husband, wife, children and the extended family, including both the families of the husband and the wife. The family is the first emotional and social support mechanism, the first provider of education and the first health care giver. Traditionally, the role of economic provider rests on the husband. The responsibility for the care and discipline of children rests mainly on the mother, but increasingly the father takes his share. The love, care and guidance provided by both are crucial for the children's healthy development.

Typical in this setting is the tradition of families caring for their elderly. The Filipino value of *utang na loob* or gratitude, includes expectations that parents will live with their children when old age comes. From the point of view of the elderly, this living arrangement may realize their expected benefits from having children. With urbanization and industrialization, an emerging issue is how long this family arrangement for the aged will continue to be practiced.

Demographic, social and economic changes have brought variations in family composition and structure. There are more challenges that create stressful situations affecting the family's ability to nurture and care, especially of the children. One emerging variation in family composition and structure is the solo-parent family that is made up of one parent and his or her child or children. Majority of solo parents is female. A solo parent may be a widow or widower and his or her children, a single woman and her natural child, or a mistress and her children by a married man. There are also temporary solo parents, mostly wives whose husbands are abroad or elsewhere.

Rapid urbanization and migration, high unemployment rate, continuing peace and order instability, natural disasters and overseas employment have contributed to family disorganization and instability. This is seen in the reported increase in juvenile crimes, street children, substance abuse, prostitution and family violence involving children and women as victims. There is a need for a wide range of programs to help families discharge their economic and social functions and cope with the pressures imposed on them by the rapid socioeconomic change.

The 1998 NDHS showed some characteristics of the household. These are considered indicators of health and socioeconomic conditions. On the average, a household is composed of five persons. The heads of families and households are mostly male. Women-headed households make up about 15 percent. Education is highly valued by Filipino families.



Seven out of 10 households have electricity. Almost half have piped water, mostly in urban areas. In rural areas, wells and springs are among the main sources of water. Majority of households has either a flush toilet or a closed pit latrine. Large proportions (17 percent) of rural households have no toilet facilities. Households with television and radio make up about 80 percent and 56 percent respectively.

Majority of the women in the households works. One out of three women who work has one or more children under six years old. Three out of 10 take care of their children while they work. Relatives are also common caregivers for children.

The programmatic approach to family health uses the life cycle approach, which covers the several stages of life from the womb to being a newborn, infant, preschooler, child, adolescent, adult and the older person.

At each stage, a minimum package of services should be made available to ensure the state of well-being of the family. One factor that should be stressed is the vital role of the family in the full spectrum of child development. Also steps should be taken to alleviate socio-psychological concerns which give rise to special categories of population.

Special targets are set for the special groups of population that include: children in need of special protection, women in difficult circumstances, migrant workers, persons with disabilities, rural and urban poor and indigenous peoples.

Tackling health issues of these groups require more focused preventive efforts and understanding of their needs and differences that set them apart from the mainstream. The two major health challenges are to build better data systems to get a better profile of their health status and to translate these data into strategies and intervention and packages of health services that will reach out to these groups. Issues affecting the enjoyment of the rights of these vulnerable sectors are growing. The protection of these rights, the most basic of which is the right to life and health, is important to meet their full potential, development and productivity.

Table 15. Essential Health Care Packages at Various Stages of Life

Mothers and Unborn	Newborns and Infants	Early Childhood
• Antenatal registration • Tetanus toxoid immunization • Nutrition (including vitamin A, iron, folate supplementation) • Treatment of existing conditions or diseases • Recognition, early detection and management of complications before, during and after pregnancy • Clean and safe delivery • Promotion and support to breast-feeding and management of breast complications • Information services for family planning • STD/HIV prevention and management • Dental care	• Resuscitation • Routine eye prophylaxis • Prevention and management of hypothermia • Newborn screening • Immediate and exclusive breastfeeding • Complementary feeding at six months • Prevention and management of infection • Birth registration • Birth weight and growth monitoring and promotion • Full immunization • Micronutrient supplementation • Dental care • Developmental milestone screening • Advice on psychosocial stimulation	• Growth monitoring and promotion • Nutritional screening • Micronutrient supplementation • Developmental milestone screening • Disability detection • Management of common childhood illness • Dental care • Counseling on accident prevention and use of safe toys and psychosocial stimulation • First aid

Table 16. Essential Health Care Packages at Various Stages of Life

Middle Childhood	Adolescence and Youth	Adults	Oldest People
• Integrated management of childhood illness • Accident prevention • Nutrition and diet counseling • Dental care	• Management of illness • [illegible] • [illegible] • [illegible] • [illegible] • [illegible] • [illegible] and [illegible]	• Nutrition and diet [illegible] • [illegible] • [illegible] • [illegible] • [illegible] • [illegible]	• Nutrition and diet counseling • Dental care • Post-epidemic [illegible] • Screening [illegible] of chronic [illegible] infectious [illegible] • Counseling [illegible] abuse • Mental health [illegible]

THE MOTHER AND THE UNBORN

Pregnancy is a physiologic process that has certain risks. Every year, more than two million women in the Philippines become pregnant. Most pregnancies end up in birth of a live, healthy baby. For some, childbirth is not a joyous event but a time of pain, suffering and even death for the mother or the baby or both.

WHO estimates that at least 15 percent of all pregnant women require skilled obstetric care in the absence of which they will suffer serious and long-term illness and disabilities. In the 1998 NDHS, maternal deaths were estimated to be 14 percent of all deaths of women aged 15-49. Approximately two women for every 1,000 live birth die during pregnancy, at childbirth, or in the period after childbirth. Filipino women also face a one-in-100 chance of dying of maternal causes in their lifetime. Maternal deaths are higher in poor rural and isolated areas and poor urban communities. Based on the NSCB data, the top three regions in terms of maternal mortality rate (1990-95) are ARMM, Regions 10 and 9.

The major causes of maternal deaths are postpartum hemorrhage, hypertension and its complications, sepsis and obstructed labor. Complications arising from abortions also cause morbidity and mortality. Among the causes of hemorrhage, abortion ranks fourth with an average rate of 7.22 percent over a period of 10 years (*POGS 1985-94*). Indirect estimates of abortion rates showed Metro Manila with the highest abortion rate of 33 per 1,000 women aged 15-44 years and lowest in the Visayas with 9 per 1,000 women aged 15-44. While most women survive such complications, they may nonetheless suffer acute or chronic illness and debilitating conditions such as anemia or reproductive tract infections or lifelong disabilities such as obstetric fistulae.

Illness or its treatment may be dangerous for the pregnant woman. The existing illness may be worsened by pregnancy and may harm the fetus. Anemia was reported among 50 percent of women during pregnancy. More than 30 percent also had goiter, high blood pressure, kidney disease or heart disease. The rest were ill with tuberculosis, malaria, hepatitis and others (*1993 Sex Motherhood Survey*).

The risk of maternal death is linked to the characteristics of women. The age of the mother seems to be a strong determinant, with the very young (less than 18 years old) and the older age group (more than 35) facing the likelihood of

death. Other risk factors for pregnant women are: height of less than 145 cm., having a fourth or more baby, history of complicated childbirth, such as previous caesarian section, three consecutive miscarriages or a stillborn baby and postpartum hemorrhage and medical conditions, such as tuberculosis, heart disease, diabetes, bronchial asthma and goiter.

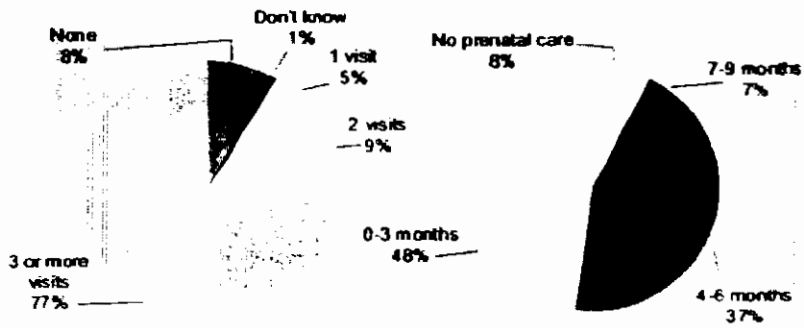
Other factors that contribute to maternal death include too close birth spacing, too frequent pregnancies, poor detection and management of high-risk pregnancies, inadequate referral system (due to lack of communication and transportation facilities), attendance at deliveries by non-trained birth attendants, maternal micronutrient malnutrition and inadequate and low use of health services. Especially in remote areas, health personnel and facilities are ill equipped to handle obstetrical emergencies.

The 1998 NDHS showed considerable gaps in maternal care services. For most of births (77 percent), mothers made three or more prenatal visits, and for almost half of the births, the first prenatal visit was made in the first three months of gestation. Only 33 percent were told about the danger signs of pregnancy.

The proportion of mothers who received tetanus toxoid immunization was only 38 percent compared to 42 percent in 1993. Seventy-five percent of pregnant women received iron tablets, but only 57 percent of the pregnant women received iodine supplement. While a high proportion (86 percent) go to professional health workers for prenatal check-ups, only 56 percent were helped by these health workers during childbirth. Two thirds (66 percent) of births were delivered at home. Medical assistance at delivery was more common among women with lower order births, those who live in urban areas, those who have higher education, and those who had four or more prenatal visits. In Metro Manila, professional health workers attended 92 percent. In the ARMM the proportion is only 16 percent.

Because of the effect of maternal health and nutrition and sociobehavioral factors on the eventual outcome of pregnancy, it is worth mentioning that fetal deaths account for almost 3 percent of total registered deaths while low birth weight babies (LBW < 2500 g at birth) is 16.6 percent of total live births. Congenital malformations such as congenital cretinism, spina bifida and rubella baby syndrome may result from nutritional deficiencies or maternal infection.

Figure 43. Percentage Distribution of Prenatal Care Visits and Stages of Pregnancy at First Visi
Philippines, 1998



Source: NDHS, 1998

Most complications of pregnancy and childbirth can be prevented and effectively managed by providing quality and timely interventions before, during and after pregnancy. Limiting the number of pregnancies, especially those at high risk, can reduce maternal and neonatal deaths. Family planning information and services can help avoid births that are unwanted, too early, too closely together, too many or too late. Once a woman is pregnant, the number of obstetric complications can be reduced by antenatal, delivery and postpartum care, and ensuring that all women have access to skilled care for management of complications and emergencies.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce maternal mortality ratio to 86 deaths per 100,000 live births.
   (Baseline: 172 deaths per 100,000 live births in 1998, NDHS)
2. Reduce LBW (<2500 g. at birth) to 12 percent of total live births.
   (Baseline: 16.6 percent in 1997, FHSIS)
3. Reduce perinatal mortality rate to 18 deaths per 1,000 livebirths.
   (Baseline: 27.1 deaths per 1,000 livebirths in 1993, Safe Motherhood Survey)

Risk Reduction Objectives

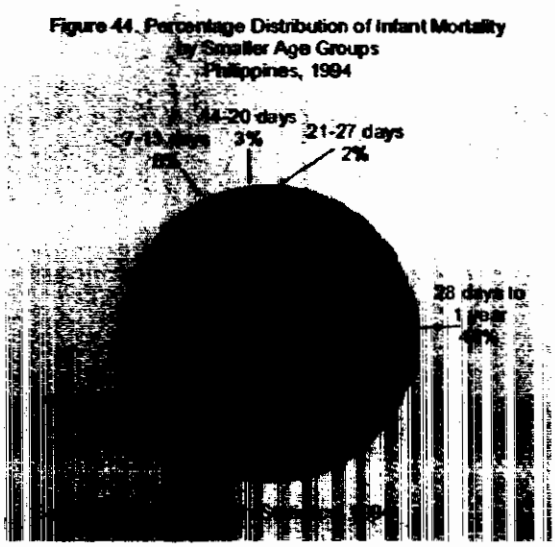
1. Increase the proportion of pregnant women who have at least five prenatal visits to professional health providers to 80 percent.
   (Baseline: 77 percent with at least three prenatal visits in 1998, NDHS)
2. Increase the proportion of postpartum women initially breastfeeding within one hour after birth to 90 percent.
   (Baseline: 40.5 percent in 1998, NDHS)
3. Reduce the proportion of pregnant women with iron deficiency anemia to 33 percent.
   (Baseline: 43.6 percent in 1993, FNRI)

Services and Protection Objectives

1. Ensure that 80 percent of mothers are provided with essential health care package.
   (Baseline data is established in 2000)
2. Ensure that 80 percent of pregnant women are provided with at least two doses of tetanus toxoid.
   (Baseline: 38 percent in 1998, NDHS)
3. Increase the percentage of births that are attended by professional health providers to 80 percent.
   (Baseline: 56 percent in 1998, NDHS)
4. Increase the percentage of postpartum women who have at least one postnatal visit within one week after birth to 80 percent.
   (Baseline: 42.7 percent in 1998, NDHS)
5. Increase the percentage of referral hospitals with functioning comprehensive essential obstetric care to 80 percent.
   (Baseline: 20 percent of District hospitals and 47 percent of provincial hospital in 1998, WHSMP Report)
6. Increase the percentage of all health facilities with functioning basic essential obstetric care to 90 percent.
   (Baseline: 9.5 percent of RHUs and 2.6 percent of BHSs in 1998, WHSMP Report)

NEWBORNS AND INFANTS

The womb is the child's first environment. The health condition of the mother, the food she eats, the water she drinks, her activities and exposure to various pollutants greatly affect the health and well-being of the child-in-the-womb and its further growth and development. Low birth weight (LBW) is an example that shows the close interrelationship among the mother, the child and the environment. LBW is the end result of a mother's lifetime of ill health, malnutrition, parasitic infection, overwork, smoking and infections during pre-conception and pregnancy periods. Both during the newborn period, then into infancy and childhood, many of these LBW infants remain chronically malnourished and stunted as a result of repeated infections and infestations. Their growth deficiency will continue in adult life and translate into impaired learning abilities and reduced work output. Moreover, data show that maternal death during labor or delivery almost always means death for the fetus. If a mother dies after delivery, this often leads to the death of the livebom infant as well.



For the newborn, every day and every minute are critical in setting the quality of life of the individual. WHO estimates that every year more than eight million infants die before their first birthday. More than half survives for less than a month. Among these newborn deaths, almost all takes place in developing countries and nearly two-thirds occur in the first week after birth. Most of these deaths take place on the first day and during the first hours of life. They die while they are still technically newborns. The longer the baby survives, the more likely that the death will be due to causes other than those related to pregnancy and delivery.

The causes of perinatal death include poor maternal health, inadequate care during pregnancy, inappropriate management of complications during pregnancy and delivery, poor hygiene during delivery and the first critical hours after birth, lack of newborn care and discriminatory care.

Preterm birth, one of the commonest reasons for perinatal death, shows how different factors combine to result in death. Many maternal factors, such as *abruptio placentae* and multiple pregnancies cause preterm birth. Preterm birth is also associated with LBW. Although low gestational age and LBW cannot be classed as causes of fetal death, such fetuses do not tolerate the processes of birth as well. Asphyxia kills or damages preterm fetuses during or immediately after birth more frequently than term fetuses. Additionally, the abnormal presentation of many preterm fetuses may contribute to birth asphyxia and trauma. Preterm newborns do not adapt well to extrauterine life. They often have a hard time in starting breathing, and are susceptible to cold injury that can easily be fatal. Infections that cause preterm birth can also cause death in preterm infants.

In the 1998 NDHS, the infant death rate was 35 per 1,000 live births, while the neonatal death rate was 18 deaths per 1,000 live births. Among regions, infant mortality rate (IMR) is highest in Eastern Visayas and lowest in Metro Manila and Central Visayas. Death is much higher in mothers with no antenatal care or medical assistance at the time of delivery. Among the top 10 causes of infant deaths (1998 PHS) are: infectious diseases such as pneumonia, diarrhea, septicemia, meningitis, measles (24 percent), respiratory conditions of newborn and fetus (15.5 percent), congenital anomalies (7.7 percent), avitaminosis and other nutritional deficiencies (14 percent), birth injury and difficult labor (4.5 percent).

Definitions of Perinatal Events (WHO)

Perinatal mortality *refers to deaths occurring in the perinatal period. This includes the period after 22 weeks of pregnancy (stillbirth) and the first seven days of life.*

Neonatal mortality *refers to deaths of liveborn infants during the neonatal period. This starts at birth and ends [illegible] days of life. The neonatal period may be divided into the early neonatal period (the first seven days) which is also part of the perinatal period and the late neonatal period (from the eighth to the 28th day of life).*

Newborn is defined locally by tradition and usually refers to the period during the first month of life.

Live birth is the complete expulsion or extraction of a live child, irrespective of the duration of pregnancy, or shows any other evidence of life, irrespective of the duration of pregnancy.

Fetal death (stillbirth) *is death before the complete expulsion or extraction from the mother, irrespective of the duration of pregnancy. The death is indicated when the fetus does not breathe or show any other evidence of life after separation from the mother.*

[illegible] refers to deaths up to 12 months of age.

Proper and adequate infant feeding, starting at birth, is important for the child's physical and mental development. Breastfeeding alone is the best form of feeding during the first six months of life. The 1998 NDHS showed that 88 percent of children were breastfed for a median duration of 13 months. The median duration for exclusive breastfeeding is only one and a half months. Urban children are less likely to be breastfed than rural children. Only 79.6 percent of children in Metro Manila are breastfed compared with 95 percent of children in CAR. Ironically, the mother's education has a negative association with their children's chance of being breastfed.

Children of mothers who received help from medical personnel at delivery and children who were born in a health facility are less likely to be breastfed than those who were delivered by a traditional birth attendant or were born at home. Forty-one percent of children born were given breastmilk during the first hour and 70 percent during the first 24 hours. At age 6-7 months, most infants received complementary feeding.

The survey also showed that 73 percent of children aged 12-23 months were fully vaccinated, but only 65 percent received vaccinations before their first birthday.

Most mortality and morbidity are caused by conditions that can be prevented and treated. Interventions that benefit mothers by reducing maternal deaths and complications also benefit their infants. Safe and clean delivery, early detection and management of STD and of pregnancy and delivery complications, meeting the physiological needs of the newborns at birth, and prevention and management of infections are interventions that are available, attainable, and cost-effective and improve the chance of survival of both mother and infant.

Goal: The survival and full growth and development of infants beyond one year old are ensured.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce mortality rate among 0-6 days old neonates to 3.9 deaths per 1,000 livebirths.
   (Baseline: 7.8 deaths per 1,000 livebirths in 1994, PHS)
2. Reduce infant mortality rate to 17 deaths per 1,000 live births.
   (Baseline: 35 deaths per 1,000 live births in 1995, NDHS)

Risk Reduction Objectives

1. Increase the percentage of infants fully immunized (except Hepatitis B) before their first birthday to 95 percent.
   (Baseline: 90 percent in 1997, FHSIS)
2. Increase the percentage of infants exclusively breastfed up to six months to 30 percent.
   (Baseline: 20 percent in 1998, NDHS
3. Increase the percentage of infants given timely and proper complementary feeding at six months to 70 percent.
   (Baseline: 60.9 percent in 1998, NDHS)
4. Increase the percentage of mothers or caregivers who know and practice home management of common childhood illness to 80 percent.
   (Baseline data is established in 2000)
5. Ensure 80 percent of infants are protected against neonatal tetanus at birth.
   (Baseline data is established in 2000)

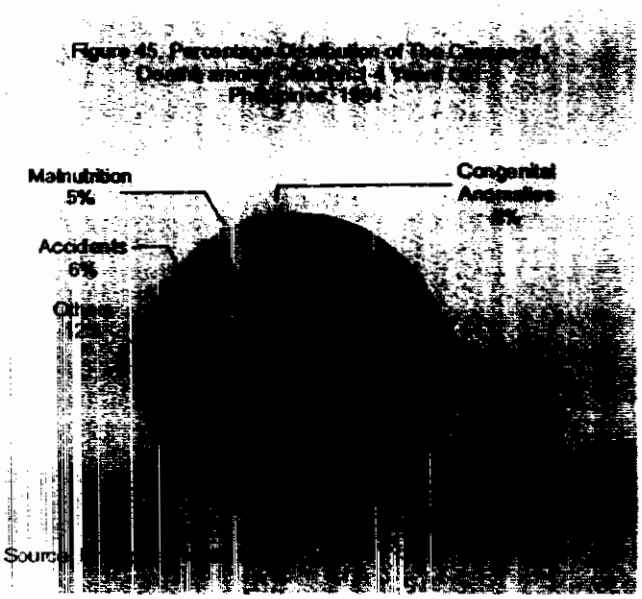
Services and Protection Objectives

1. Ensure 90 percent of health facilities can provide comprehensive newborn and infant care with trained staff and adequate supplies.
   (Baseline data is established in 2000)
2. Ensure 90 percent of newborns and infants are provided with essential health care package.
   (Baseline data is established in 2000)

EARLY CHILDHOOD

Early childhood is defined as the first six years of life. Many health conditions affect the child during the early years. These range from acute episodes like diarrhea and pneumonia to chronic infections such as parasitism and tuberculosis. During this period most of these conditions are at their highest incidence or prevalence.

The overall death rate among children under five has declined in recent years. Based on the 1998 NDHS, the estimate of child mortality (1-4 years old) is 13.8 deaths per 1,000 livebirths and the probability of dying between birth and the fifth birthday was 48 deaths per 1,000 livebirths. The 1994 PHS estimate of death rate among 1-4 years old children is 1.9 per 1,000 population and makes up about 4.4 percent of deaths among all ages. The top five leading causes (which make up about 73 percent of deaths in this age group) are pneumonia, diarrhea, measles, meningitis and often a combination of these conditions with underlying malnutrition. About 6 percent die of accidents, i.e., submersion, foreign bodies, and vehicular accidents which occur at a rate of 18 deaths per100,000

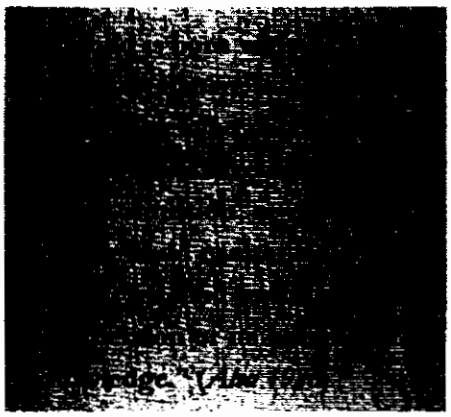


Nutritional problems are common among children. Protein energy malnutrition among preschoolers is 10.9 percent, iron deficiency anemia is 26.7 percent, and vitamin A deficiency is 0.4 percent (FNRI 1993).

Ill health and undernutrition have negative consequences on the child's physical, mental and cognitive development. Diarrhea, for example, may be a more important cause of growth faltering than food availability in early childhood. Measles is an acute infection followed by several weeks of profound anorexia, often leading to secondary diarrhea and pneumonia and consequent growth faltering. Parasitism, also common in children, presents a harmful, often clinically inapparent infection, which chronically constrains growth. Disabilities and malnutrition affect childhood development. Asthma is now recognized worldwide

as affecting many children throughout early childhood. It is an example of a chronic disease that can impair children's socialization, school performance and later life. Disability as a result of accident, violence, abuse, neglect, or exploitation is also common. Blindness resulting from measles and Vitamin A deficiency is preventable and treatable.

The effects of these health conditions should not be viewed in isolation from other factors. Nutritional deficits can worsen the ill effects of infection. Socioeconomic factors can profoundly influence the quality of care children receive and their susceptibility to and recovery from diseases.



Childcare also means adequate stimulation and attention to the child's motor skills and cognitive ability. Most of the development of a child's brain, nervous system and motor system is complete by six months. Much of it is accomplished by the age of two. Good health and nutrition begin in the womb. It is believed that "learning begins at birth."

Child development interventions must therefore attend to the health and nutrition of the mother as early as possible during pregnancy. Evidence shows that micronutrient or protein-energy malnutrition if not prevented or corrected by the age of two or three is impossible or very difficult and expensive to correct later.

A child's psychosocial developmental needs differ as an infant, as a toddler, and as a four year old. Infants need body contact with the parent, good feeding practices, and appropriate stimulation. Toddlers explore a wider environment and need different kinds of attention and opportunities for learning. The developmental needs of a four year old can no longer be fully met by the immediate family. The child's social and emotional development will be inhibited if he does not learn to interact with children of a similar age.

An integrated health, nutrition and education efforts at appropriate ages throughout early childhood will not only promote survival but also the physical, intellectual, social, and emotional development of the child.

Goal: The survival and full growth and development of children beyond five years are ensured.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce mortality rate among children 1-4 years old to 33.6 deaths per 1,000 live births.
   (Baseline: 48 deaths per 1,000 live births in 1998, NDHS)

Risk Reduction Objectives

1. Increase the percentage of mothers or caregivers who know and practice home management of common childhood illnesses to 80 percent.
   (Baseline data is established in 2000)
2. Increase the percentage of mothers or caregivers who seek care when a child is sick to 80 percent.
   (A sick child looks unwell to caregiving, is not eating or drinking or vomiting everything, has a change of consciousness, and/or has a high fever or difficult breathing)
   (Baseline: 58 percent care-seeking for children with cough and rapid breathing in 1998, NDHS)
3. Increase the percentage of mothers or caregivers who continue feeding during illness to 80 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the percentage of sick children who are treated appropriately for the diagnosis made by the health workers to 80 percent.
   (Baseline data is established in 2000)
2. Increase the percentage of health facilities with available stocks of essential drugs for common childhood illnesses to 80 percent.
   (Baseline data is established in 2000)
3. Increase the percentage of mother or caregivers who are given counseling on child treatment to 80 percent.
   (Baseline data is established in 2000)
4. Ensure 80 percent of children are provided with essential health care package
   (Baseline data is established in 2000)

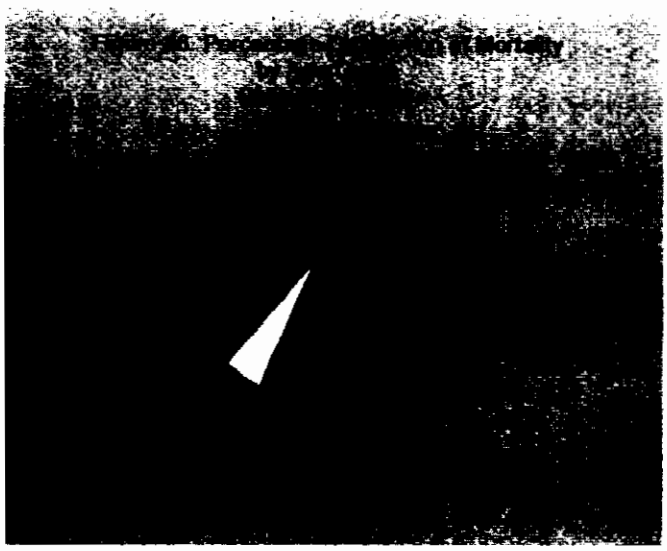
MIDDLE CHILDHOOD

The middle childhood stage is also called the school age group of children 6-9 years. School age is the period when a child is considered mentally and physically fit to attend school and required to do so by law.

In middle childhood, the greatest need of children is development. This stage is characterized by a slow steady growth, increased body proportions, enhanced mental capabilities and better motor coordination. Body reserves are being laid down to prepare for the increased needs during adolescence. Higher amounts of protein of high biological value are important to sustain strength for continued growth and development, to repair worn out tissues and for resistance against infections. Iron intake, especially for girls, should be considered because menstruation usually starts at age 11-12 years. Foods rich in vitamins A, B, C and iodine should also be given.

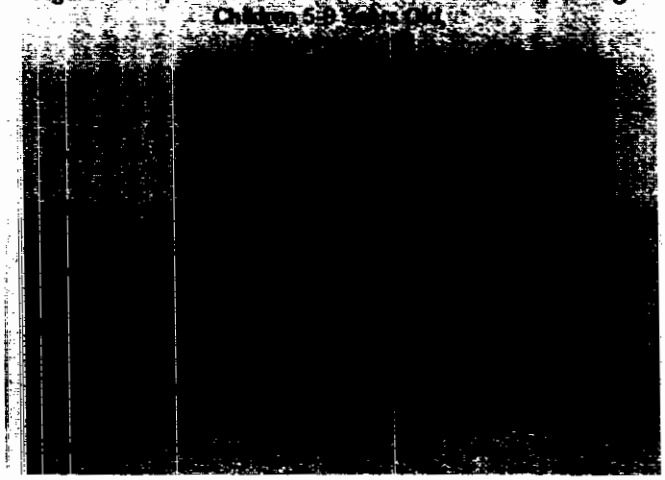
In general, nutrient allowances of this group vary depending on the child's age, size, needs and activity. Their nutritional needs differ from that of an adult. At this age, children are actively growing. Girls at the pre-puberty stage experience spurts of growth. Their attitude towards food is changeable. They should not be fed with foods of poor nutrient content.

Children at this stage in the life cycle are exposed to the lowest risk of death. The 1994 PHS reported deaths in the age group 5-9 years old as 1.9 percent of the total deaths.



Infectious diseases, such as pneumonia, diarrhea and measles are the main causes of death and illness with accidents emerging as the second most common causes of deaths among children in this age group. Malnutrition is also one of the problems of children, causing mental, physical, emotional disabilities and susceptibility to infections.

Figure 47. Top Five Preventable Causes of Mortality among Children 5-9 Years Old



The School Health and Nutrition profile of 1995 showed that elementary school children have considerably low nutritional status, have various forms of ailments, particularly eye and ear defects, and tuberculosis. Schools lack health and nutrition facilities, such as clinics and canteens, and have low personnel-to-pupil ratio, particularly the nutritionist-dietitians.

Malnutrition problems arise among this age group because of: low supply of needed foods, low income, large family size, parasitism and other diseases affecting digestion, low level of general and nutrition education and poor water and sanitation conditions. Moreover, school children have peculiar feeding problems that predispose them to malnutrition, such as missing breakfast, poor appetite due to the demand of schoolwork and extra-curricular activities, and craving for sweets and confections.

Children's nutrition is also influenced by consumption of fast foods, which can be less nutritious, depending on the food chosen. If fast food meals frequently consumed are nutrient-deficient or contain excess fats, sodium and calories, then nutritional imbalance may develop. High-energy low-nutrient foods often lead to obesity, a growing problem among school-age children.

Middle childhood expands the child's meaningful environment from the small circle of the family to peer relationships created in school. It is a period when children no longer need constant physical attention and can even take on household tasks. Children learn physical skills, develop their intellect through more organized play, learn to get along with peers, develop a sense of morality, acquire a conscience and a scale of values.

The child asserts his individuality, depends less on his parents and forms a social life outside his family circle. School activities hold much interest and keep him busy. He learns the basic skills of reading, writing and arithmetic that he will need to fully function in mainstream society. Thus the best opportunities for positively influencing health at this age group are found in school. Promoting health through schools could reduce common health problems and increase the efficiency of the educational system.

The WHO Global School Health initiative made recommendations that have a direct effect on school health. These are: provision of safe water and sanitary facilities; protection from infectious diseases; protection from discrimination, harassment, abuse and violence; and rejection of the use of tobacco, alcohol and illicit drugs. Every school must enable children to learn vital skills.

Health education must include topics such as infectious diseases, nutrition, preventive health care and

reproductive health. Every school should prevent when possible, treat when effective and refer when necessary common health problems. Schools should provide safe and nutritious food and micronutrient to combat hunger, prevent disease and foster growth.

Learning and development are not confined to the classroom. Children's value formation and search for role models are subject to many influences. One of the most potent factors influencing children in middle childhood is the mass media, which can be a tool for teaching children even in inaccessible areas.

[illegible] improved.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the mortality rate among children 5-9 years old.

[illegible]	[illegible]	[illegible]
Diarrhea	[illegible]	[illegible]
Meningitis	3.1	1.6
Malnutrition	1.8	0.9

2. Reduce the prevalence rate of protein-energy malnutrition among school age children.

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Risk Reduction Objectives

1. Increase the percentage of mothers or caregivers who know and practice home management of common childhood illness to 80 percent.
   (Baseline data is established in 2000)
2. Increase the percentage of mothers or caregivers who practice timely care seeking behaviors.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the percentage of elementary schools implementing school-based health and nutrition programs to 80 percent.
   (Basic school-based health and nutrition programs include: iron supplementation, healthy diet in canteen, deworming, mouth rinsing and supervised tooth brushing, immunization and provision of adequate toilet or latrines and safe drinking water.)
   (Baseline data is established in 2000)
2. Increase the percentage of elementary schools with established school-based health screening programs to 80 percent.
   (Basic school-based health screening programs include: visual acuity, urine testing and routine physical and dental check-up).
   (Baseline data is established in 2000)

3. Ensure that elementary schools are conducting regular child-parent-teacher-health worker interaction.
   (Baseline data is established in 2000)
4. Ensure 80 percent of elementary schools are enforcing policy against smoking and other substance abuse.
   (Baseline data is established in 2000)
5. Ensure 80 percent of school children are provided with essential health care package.
   (Baseline data is established in 2000)

THE ADOLESCENTS AND YOUTH

Adolescence is the transitional stage of life between childhood and adulthood that covers the period from 10 to 24 years old. WHO differentiates between the stages of adolescence (10-19 years) and youth (15-24 years). The definitions of the parameters of adolescence are problematic since children are introduced early to adult social and economic responsibilities, with little transition between childhood and adulthood.

Adolescence is marked by rapid changes in the physical, physiological, emotional and social development of the individual. Physically, there is a spurt of growth marked by changes in size and shape of the body, which will distinguish the boys from the girls. Psychosocially, the individual acquires a sense of identity, drawing apart from the elders while developing intense relationship with his peers and taking major life decisions. An important factor among adolescents that distinguishes them from adults is the initiation of risk behavior. It is a time of experimentation that may place them at risk of health-related problems.

During this stage, confusions, conflicts and disagreements with parents usually occur and if not properly handled may lead the vulnerable individual to a hostile environment that may cause self-destruction and disease or lead to acts against family and society. Due to accessibility of transport, migration of the rural youth to highly urbanized areas has become common. The cultural shocks encountered by these youth and the lack of necessary skills and training have caused problems.

Based on the 1998 NDHS, the adolescent (22.5 percent) and youth (18.6 percent) comprise 30.6 percent (young people) of the total population, with male-to-female ratio of 1:0.9 and slightly more young people in urban than in rural areas.

Health statistics reveal that 17 percent of the total morbidity from notifiable diseases are from the 10-24 year age group. Deaths among this age group comprise 6.7 percent of the total deaths. Accidents and other forms of violent deaths top the list of causes of death among 10-14 years old. The other leading causes of deaths are pneumonia, tuberculosis, rheumatic heart disease, and carcinomas. Some health problems, conditions and behavior are more prevalent in this group than other age group and may influence their future health.

Table 17. Ten Leading Causes of Mortality Among Adolescents, 10-19 Years Old Philippines, 1998

Diseases	Number	Rate (per 100,000 population)
1. Accidents and [illegible]	[illegible]	22.14
2. Pneumonia	[illegible]	5.58
3. Chronic rheu[illegible] disease	[illegible]	4.22
4. Diarrhea and [illegible] diseases	[illegible]	3.16
5. Tuberculosis	[illegible]	[illegible]
6. Diseases of [illegible] circulation and other heart disease	[illegible]	2.77
7. Meningitis	[illegible]	2.11
8. Leukemia	[illegible]	2.08
9. Malnutrition	[illegible]	1.77
10. Nephritis, n[illegible] syndrome, n[illegible]	[illegible]	[illegible]

Source: PHS

Unprotected sexual activity in adolescence brings with it the dangers of too early or unwanted pregnancy, induced abortion often in hazardous conditions, STDs, and HIV infection and AIDS. Based on the 1994 YAFSS II, a great number of Filipino youth aged 15-24 had been actively engaged in sexual activity. About 1.8 million boys and 670,000 girls had sexual relations already. On the average, the first sex encounter happened at age 18. There were signs that girls were forced into sexual relations with their partners. The maternal death rate among the 15-24 year olds comprises 21 percent. The proportion of teenagers with induced abortion is 16.5 percent, which is greater than those who had normal deliveries (11.5 percent) and spontaneous abortion (6.2 percent).

Other data from Integration 1998 showed that three of four maternal deaths occur among teenage mothers; 10 percent of forced first sexual relations; 30 percent of births to females in the reproductive ages; 30 percent of marriages below 20 years old (among aged 15-24); 74 percent of total estimated illegitimate births among those 15-24 years old. In spite of these health conditions of the youth, there existed only few services specifically addressing the youth's health and sexuality needs.

The 1993 FNRI survey showed the extent of nutritional deficiencies in young people. Iron deficiency anemia among females is 23.9 percent and males, 20 percent; goiter is 16.5 percent prevalent in females and 3.1 percent among males; and underweight prevalence is 9.4 percent.

Physical, cognitive and psychosocial changes may greatly affect the adolescent's nutritional status in terms of irregular meals (skipping breakfast), snacking (foods empty in calories and low fiber), use of fast foods, which are high in total and saturated fat, cholesterol and sodium, eating disorders and dieting associated with body image (anorexia, bulimia, obesity), unwillingness to change unhealthy dietary practices, teenage pregnancy, smoking, alcohol, drug abuse, and low use of health services.

Many health problems of adults arise from behavior in adolescence. Adolescents who smoke, drink or use other drugs are at great risk of suffering from cardiovascular, respiratory, liver disease, and cancers late in their lives. The use of alcohol

and other drugs impairs judgment, heightens immediate risks of accidental and intentional injury, including suicide and homicide, and increase the risk of needle-sharing in the case of drug abuse which may lead to HIV infections and AIDS.

The 1996 SWS national survey showed that 7 percent or 1.5 million youth (15-30 years old) claimed they had used illegal drugs and 6 percent or 1.3 million claimed to have sold illegal drugs. In the Second YAFSS (1994) report, the age of experimentation for substance abuse was between 16 and 17 years. Among males, smoking was first tried at age 16.3, followed by drinking at age 16.4 and drug use at 17. Among females, drugs were first tried at age 16.2, then smoking at age 17 and drinking at age 17.5. Smoking prevalence among young males was 40.3 percent and only 4.2 percent among young females. More than half of the youth tried drinking alcohol, and those still consuming alcohol stood at 37 percent.

Adolescents often have an inadequate understanding of their own health needs, the consequences of risky behavior, how to protect themselves against such behavior, information about existing health services and how to use them. Health workers are rarely trained in understanding adolescent sexuality and in interpersonal communication with the young.

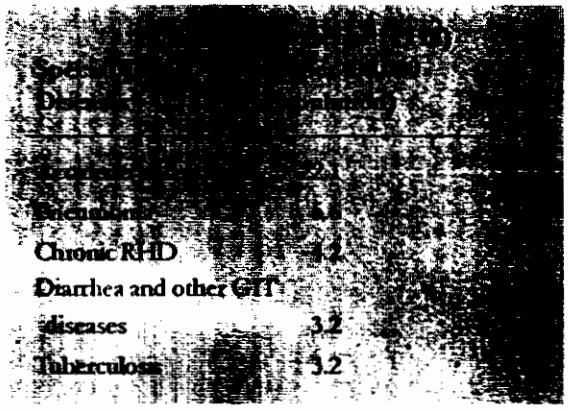
Most health services are for adults or children, and often do not meet the special needs of the young, especially their desire for confidentiality, privacy, accessible consultation hours, low cost and personalized services. Policy and legislation often lack coherence. They do not have an adequate basis to meet the needs of young people for information, education, guidance, counseling and clinical services. Adolescents have a potential to contribute to society because of their great creativity, boundless energy and innovative ideas. This group, if given the right attention and care, can be properly guided to excellence.

Goal: The total health, well-being and self-esteem of young people are promoted.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the mortality rate among adolescents and youth.



Risk Reduction Objectives

1. Reduce the proportion of teenage girls (15-19 yrs. old) who began child bearing to 3.5 percent.
   (Baseline: 7 percent in 1998, NDHS)
2. Increase the health care-seeking behavior of adolescents to 50 percent.
   (Baseline data is established in 2000)
3. Increase the knowledge and awareness level of adolescents on fertility, sexuality and sexual health to 80 percent.
   (Baseline data is established in 2000)
4. Increase the knowledge and awareness level of adolescents on accident and injury prevention to 50 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the percentage of health facilities providing basic health services including counseling for adolescents and youth to 70 percent.
   (Baseline data is established in 2000)
2. Establish specialized services for occupational illnesses, victims of rape and violence, substance abuse, i.e., adolescent health centers in 50 percent of DOH hospitals.
   (Baseline data is established in 2000)
3. Integrate gender-sensitivity training and reproductive health in the secondary school curriculum.
   (Baseline data is established in 2000)
4. Establish resource centers or "one-stop-shops" for adolescents and youth in each province
   (Baseline data is established in 2000)
5. Ensure 50 percent of adolescents and youth are provided with essential health care package.
   (Baseline data is established in 2000)

THE ADULTS

Adulthood is the period of life when one has attained full growth and maturity. It is the longest period of the life cycle and possibly the peak productive years. These are the years of career beginnings, establishing one's home, parenthood, starting young children through the same life stages, and early struggles to make a living.

The young and old alike look to adults to provide and care for them. By working, adults earn the means to support their children and their aged relatives. During these productive years adults deliver the goods and services needed by society. The better the health of the adult population, the greater is their ability to play this vital role, the better the health of the society. Women's health in particular crucially affects that of their children and future generations.

Adults have the chance to assume personal responsibility for their health. Many leading causes of death are preventable wholly or in part through changes in lifestyle.

The 1994 PHS showed that the top leading causes of deaths in adults (20-59 years old), are cardiovascular diseases, tuberculosis, pneumonia, malignant neoplasms and chronic obstructive lung diseases. Gastric, duodenal and peptic ulcers are also among the top 10 leading cause of death. Lifestyle habits, such as alcohol consumption, smoking, high intake of cholesterol predispose people to such kind of illnesses.

The 1993 FNRI survey showed that the prevalence of anemia among males in this age group is 12.7 percent while for females, it is higher at 24 percent and higher still for pregnant and lactating mothers at 43.6 percent. Goiter of all grades was present in 5.2 percent of the total population at all ages.

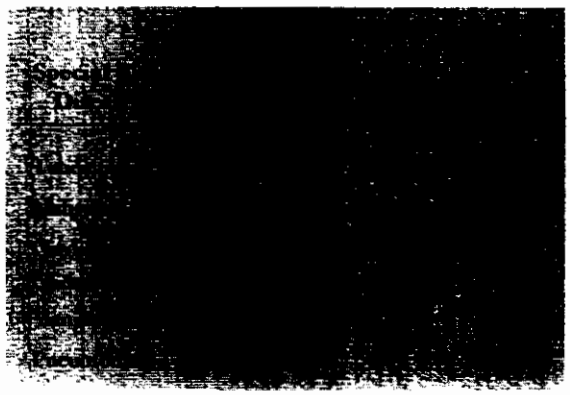
Adulthood also marks the peak of sexual activity for both sexes. During this phase the couple experience varied reproductive health-related problems or concerns. A mother may experience toxemia or sepsis during pregnancy, or in case of unwanted pregnancy, the couple may resort to induced abortion and the woman may develop complications. STD/AIDS or other reproductive tract infections can be experienced, depending upon the lifestyles of the couple. A husband infected by a commercial sex worker can pass STD infection to the innocent wife.

Work-related illnesses and physical injuries can impair or incapacitate performance and productivity of adults. The health challenges that beset adults rest mainly on changing their lifestyles to maintain health and prevent disease. However, lifestyles once established, are hard to change. Socioeconomic status, the environment, community norms, media, advertising, work standards, access to health care and counseling influence adult behavior. The adult and the community should work together to create an environment that facilitates and support healthful behavior.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the mortality rate among adult population (20-59 years old).



2. Reduce total fertility rate to 2.7 children (Baseline: 3.7 in 1998, NDHS)

Risk Reduction Objectives

1. Increase the percentage of adults utilizing health services to 80 percent.
   (Baseline: 50 percent in 1998, NDHS)
2. Increase the percentage of adults practicing healthy lifestyles to 50 percent.
   (Baseline data is established in 2000)
3. Increase contraceptive prevalence rate to 70 percent and modern contraceptive use to 60 percent.
   (Baseline: 46.5 percent and 26 percent, respectively in 1998, NDHS)
4. Increase the percentage of adults undergoing screening tests for various diseases to 50 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the percentage of health facilities providing essential services for adults to 80 percent.
   (Baseline data is established in 2000)
2. Increase the coverage of health insurance to 35 percent.
   (Baseline: 15 percent in 1997, NHA)
3. Ensure 80 percent of adults are provided with essential health care package.
   (Baseline data is established in 2000)
4. Reduce the unmet needs for family planning services to 10 percent
   (Baseline: 20 percent in 1998, NDHS)
5. Increase the percentage of hospitals providing the ten elements of reproductive health services to 50 percent.
   (Baseline: 0 in 1998, DOH)
6. Increase the percentage of rural health units and health centers providing integrated reproductive health services with four core elements to 50 percent.
   (Baseline: 0 in 1998, DOH)

OLDER PERSONS

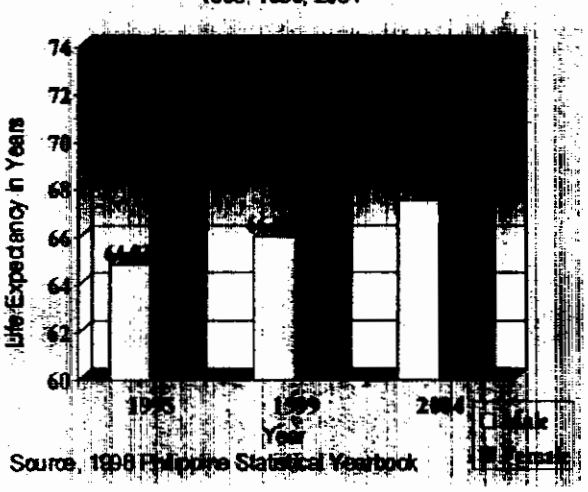
Aging is an inevitable natural process. As people age, their lifestyle shows its consequences. The accumulated effects have consequent major impact on the health of older persons. With the rapid decline in fertility and increasing life span, the proportion of older persons to the total population will increase significantly.

Worldwide statistics show that in 1990 the population of 60 years old and over is almost half a billion or almost 9 percent of the world's population. Projecting from this population data, this number is expected to triple to about 1.4 billion by the year 2030. This population growth will come mostly from developing countries in Asia, including the Philippines.

The economic and social impact of the aging population should be a priority of all governments. There is an urgent need to address the physical, psychological, social and economic needs of the elderly, considering that they will make a significant component of our human resource. There is a moral obligation to develop necessary mechanisms and support systems to enable the older persons to lead healthy and productive lives and to provide them not only a longer life span but also a better quality of life as enunciated by WHO.

The 1995 NSO census showed that those 60 years and above comprise 5.4 percent of the population which is roughly 3.7 million out of a total 68 million population of the Philippines. This is expected to double in the next 20 years. Its impact on the economy of the nation is tremendous and needs to be addressed systematically as a matter of priority.

Figure 48. Projected Life Expectancy at Birth by Sex 1995, 1999, 2004



Source: 1996 Philippine Statistical Yearbook

The health problems affecting older age groups can be seen through mortality and morbidity rates by leading causes. Tuberculosis, malignancies, cardiovascular diseases, and diabetes mellitus are leading causes of deaths among the age group. For older people who are poor, access to adequate nutrition is often in jeopardy.

Nutritional habits and other factors like food intake, digestion, absorption, storage and metabolism and elimination of waste products affect their nutritional status. These are brought about by decline in physiological function, loss of teeth, physical discomfort, social and psychological factors.

The underweight prevalence among older females is 16 percent, which is 4.6 percent higher than the prevalence in males (11.5 percent). Anemia is 45 percent while thiamine deficiency is 35 percent and rivoflavin deficiency is 12 percent among older people. Spongy bleeding gums indicative of Vitamin C deficiency is noted in 10.6 percent of the adult population (*FNRI 1993*).

Far from being frail, most old people remain physically fit, able to carry out tasks of daily living and maintain high functional capacity. The decline in functional capacity is largely determined by external factors including smoking, alcohol consumption, diet and social class.

Smoking, for example, can accelerate the natural decline of cardiac function. The acceleration in decline may be reversed. Stopping smoking and small increases in the level of physical fitness may reduce the risk of coronary heart disease. For those who are already disabled, improvements in rehabilitation and adaptations of the physical environment help reduce the progress of disability.

While the vast majority of people remain fit and able to care for themselves in later life, a minority, particularly the very old, become disabled to the point that they need care and assistance with the activities of daily living. Assistance in old age is one of the most important values provided by the Filipino family. As a rule, only the "misplaced" or the "disadvantaged" live in homes for the aged. Some are migrants into the cities but who have roots in remote places. Some are very poor and have no known relations. Some have been abandoned by their relatives.

The 1998 NDHS revealed that close to 70 percent of the elderly reside with at least one child. Overall, only 4 percent live alone. Two-thirds co-resides with four or more persons. Thirty-one percent live with two or more children and 16 percent with three or more children. At present, there are 21 homes for the elderly in the Philippines. Of these, three are run by the government and the rest by the private sector. Each home accommodates only about 900-1,000 people.

Older people's access to health care is limited as the services are intended for the general population. Often, the aged can hardly benefit from free medicines and hospitalization due to limited budget. Health care and rehabilitative needs of the growing elderly population have not been given priority in the planning and implementation of health, socioeconomic and political programs in the country.

A person may not have control over early life expectations and other factors such as poverty or low education, but actions taken during the early phase of life greatly affect health in later life. Information about healthy lifestyles needs to be promoted, including the importance of a balanced and healthy diet, adequate exercise, avoidance of smoking and excessive alcohol consumption. Policy decisions to encourage healthy, active aging must include the creation of supportive social and environmental conditions throughout life.

Goal: A healthy and productive older population is promoted.

National Objectives for Health by 2004

Health Status Objectives

1. Increase the mean life expectancy to 70 years.
   (Baseline: 68 years in 1999, NSCB)
2. Reduce mortality and morbidity rates by 50 percent among the older persons.
   (Baseline data is established in 2000)
3. Reduce malnutrition rates by 50 percent among older persons.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase the percentage of older persons availing of regular screening and assessment for cardiovascular, cancer and diabetes to 90 percent.
   (Baseline data is established in 2000)
2. Increase the percentage of older persons who have stopped smoking and drinking alcohol to 50 percent.
   (Baseline data is established in 2000)
3. Increase the percentage of older persons who maintain adequate physical activity to 50 percent.
   (Baseline data is established in 2000)
4. Increase the percentage of older persons who eat a well-balanced diet to 50 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the percentage of health facilities providing medical and dental services for older persons to 80 percent.
   (Baseline data is established in 2000)
2. Increase the percentage of health facilities providing nutrition and health education counseling for older persons to 80 percent.
   (Baseline data is established in 2000)
3. Increase the percentage of DOH hospitals with geriatric units and rehabilitation services (specialized services) to 50 percent.
   (Baseline data is established in 2000)
4. Increase the percentage of older persons who are covered by public or private pension scheme to 50 percent.
   (Baseline data is established in 2000)
5. Increase the percentage of older persons needing institutional care who are placed in appropriate institutions to 20 percent.
   (Baseline data is established in 2000)
6. Ensure 80 percent of older persons are provided with essential health care package.
   (Baseline data is established in 2000)

CHILDREN IN NEED OF SPECIAL PROTECTION

The Philippines' continuing commitment to uphold the rights of children is defined in the Philippine Plan of Action for Children. The document is the basis for the development of policies, programs and activities for their survival, development and protection. Children (0-18 years old) make up almost half of the population (45 percent), justifying a pro-children stance of the government (*NDHS 1998*).

While progress has been made in reducing child mortality and morbidity, a 1997 situation study has shown an increasing number of children and youth in especially difficult circumstances. These situations include:

- Exploitative and hazardous child labor
- Sexual abuse, commercial sexual exploitation, STD and HIV/AIDS
- Armed conflict and other organized forms of violence
- Disability
- Temporary or permanent loss of primary care givers
- Weak law enforcement, child-insensitive judicial procedures and slow administration of juvenile justice
- Substance abuse
- Other forms of child abuse and neglect, including physical and mental violence, and maltreatment
- Exposure to environmental hazards and natural disasters

Common underlying factors that place children in these situations include poverty, large family size, death or absence of one or both parents, psychological state and education of parents and caregivers, and availability of role models.

Working Children

The 1995 NSO survey estimates the number of working children 5-17 years old to be 3.7 million. This means three out of 20 children are working. Region 4 and NCR has the most number of working children. In terms of proportion, Region 12 leads with 26 percent of its children working. Males comprise two-thirds of working children. About two out of three working children live in the rural areas. About 94 percent are 10-17 years old.

The harsh conditions in the workplace to which children are subjected to, lead to health and psychological effects, including communicable disease, malnutrition, injuries, accidents and antisocial behavior.

Most work-related problems are lack of clean water supply, prolonged working time of as much as 10 hours (in 42 percent of those surveyed), unsanitary and hazardous work environment and low salaries. Another major problem is bonded labor. It is any form of forced employment (usually being kept a prisoner within the workplace until one's debt is paid off) resulting from the pressure to repay debt incurred by the child worker from an employer, often through an illegal recruitment system.

Sexually Exploited and Abused Children (SEAC)

Child sexual abuse includes any form of sexual contact, such as fondling, masturbation and intercourse that occurs between a child and someone in a position of power and authority. The three major forms are incest, rape and molestation.

Commercial sexual exploitation is where children, male or female, who for money, profit, or any other consideration or due to coercion or influence of any adult, syndicate or group, indulge in sexual intercourse or lascivious conduct.

Child pornography refers to the visual or audio depiction of a child for sexual gratification of the user, and involves the production, distribution or use of such material (*UNICEF 1997*).

The findings of the Phase I Research on Family Violence by the UP Center for Women's Studies Foundation, Inc., showed that the child molester or abuser is significantly older than his victim, usually in their 30s or 40s (the average age is 36 years). The typical victim of abuse is an 11-year-old girl. The most frequent abusers of female children are their fathers (29 percent), followed by their uncles (16 percent). Fathers have made some incest victims pregnant. Most cases take place at home while the victim is alone, mostly at night.

There is a significant delay in reporting the abuse due to lack of awareness on the part of the victim. Nearly one out of 10 of the young victims had no idea that they were being violated, compounded by the fact that the abuse was inflicted by figures they look up to or depend upon for protection.

Abuses are uncovered in schools by teachers who notice signs of distress - in some cases, pregnancy - in child victims, and in hospitals in the course of diagnosing complaints, injuries or ailments disguised as accidental.

Child prostitution, on the other hand, is rampant in the Philippines where marketing of sexual services is on an industrial scale. Child prostitutes are mainly females with ages ranging from 13 to 18. Most were out of school, and many of them live with friends and work-mates. They were initiated into the sex trade at the early age of 13 years to as late as 18 years, or an average of 16.7 years old.

The health and psychological effects of child prostitution include: communicable diseases especially STD, unwanted pregnancies and abortions, physical injuries, mental stress, alcohol and substance abuse, antisocial behavior and death.

Children in Situation of Armed Conflict (CSAC)

The term children in situation of armed conflict refers to:

- Children of families displaced as a result of armed conflict
- Children who are physically weakened, abandoned, orphaned, or disabled and emotionally traumatized as a result of armed conflict
- Child combatants and those mobilized as guides, couriers and other conflict-related activities
- Children whose schooling has been disrupted due to armed conflict

Since 1986, 42 out of 73 provinces in the country have experienced recurring incidences of armed conflict. This has displaced 650,000 families, 50 percent of which include children 0-17 years old.

Documented cases of CSAC in 1991 show about 25,500 were suffering from respiratory infections, diarrhea and parasitism (*CPC IV/ UNICEF*).

Children with Disabilities

In 1995, 13.4 per 1,000 population were reported to have some type of disability or impairment. Fourteen percent or 128,997 were children, constituting:

- 11.4 percent of the totally blind
- 11.5 percent of the totally deaf
- 40 percent of the mute
- 43.3 percent of those with speech defects
- 25.9 percent of those with loss of one or both arms or hands
- 16.4 percent of those with loss of one or both legs or feet
- 33.3 percent of those mentally retarded
- 16.3 percent of those mentally ill

Street Children

A situational study done in 10 cities suggested that the number of street children ranged from 2 percent to 3 percent of the child and youth population of a city. There are more male street children than female. In Metro Manila alone, it is estimated that the number of street children ranged from 50,000 to 75,000.

Children in the streets are exposed to gangs, drugs, and sexual activity. They have suffered arrests, prostitution, thefts, robbery and other illegal activities such as drug pushing and substance abuse.

Children and Substance Abuse

A 1996 Social Weather Station (SWS) national survey showed that 7 percent or 1.5 million youths (ages 15-30) claimed they had used illegal drugs and 6 percent or 1.3 million claimed to have sold illegal drugs.

From the area survey of Metro Manila, 40 percent of the 700 street children surveyed admitted using prohibited drugs. Of these were users of solvent or rugby (66 percent), cough syrup (14 percent), marijuana (5 percent), *shabu* (2 percent) and other types of drugs (12 percent). Daily use of drugs was admitted by 35 percent of drug users while 38 percent reported using drugs three times a week.

The male first tried smoking at age 16.3 followed by drinking at age 16.4 and drug use at 17. The female first tried drugs at age 16.2, then smoking at age 17 and drinking at age 17.5.

Smoking prevalence among males was 40.3 percent and only 4.2 percent among females. This will imply about 2.75 million young smokers.

More than half of the youth have tried drinking and 37 percent still consume alcohol on a fairly regular basis (4.7 million youth drinkers).

Other Forms of Child Abuse and Neglect

A study of 1,000 documented cases of family violence showed various forms of child abuse: physical, verbal, economic, emotional and sexual. Other variants of child abuse are parents forcing children to beg in the streets or selling them as prostitutes.

There is an increasing number of reported child abuses, from 644 in 1991 to 4,105 in 1996 (*DSWD*). The true number may be bigger because reporting is not mandatory. Only clinics, hospitals and other institutions are mandated to report child abuse within 48 hours.

A recent report based on 12 DOH hospitals in Metro Manila showed that of 662 admissions related to family violence from January to September 1997, more than half were children. Other regions reported 1,615 cases.

Children in Conflict with the Law

In 1996, 1,380 youth offenders were recorded. Of the offenders 1,254 were detained and 126 were sentenced. The youthful offender is usually male, 14-17 years of age, elementary graduate, a middle child from a poor and large family, exposed to drugs or gang influence, charged with property-related crimes (robbery and theft). Most of the youth offenders (77.6 percent) are not living with both parents.

Apprehended youth offenders are detained at city, municipal, and district jails or at the Manila Youth Reception Center. Almost always mixed with adult offenders, they usually suffer from poor ventilation, lack of sanitary and hygienic facilities and insufficient food quantity and quality.

The living conditions of convicted minors at the correctional are practically the same as in their detention. About 74.5 percent underwent physical and psychological examination to determine specific type and level of care and program required before transfer (*Ateneo Human Rights Center, Ateneo Law School*).

Children in Alternative Parental Care

There are children whose parents are unable to provide for their basic needs temporarily or permanently. This is caused by: problem in family relationship, illness, extreme poverty, lack of parenting preparation, worsened by lack of psychological support services for families with special needs.

Children of Indigenous Peoples

Statistics on children of indigenous peoples are hard to get, as births are generally not reported.

The limited access to basic services for children in these indigenous peoples' communities is worsened by factors such as armed conflict, dislocation and natural disasters which make them more vulnerable to communicable diseases, malnutrition, poor environmental sanitation and high death rates.

Children Victims of Environmental Hazards and Natural Disasters

During disasters or calamities, population displacement is certain. People become exposed and particularly susceptible to health hazards. The children, together with their families, are forced to live temporarily in evacuation centers, often in crowded surroundings where competition for resources is stiff.

Health problems observed during major disasters were mainly due to lack of sanitation facilities, inadequate supply of potable water, problems on food safety, problems on the disposal of the dead and overcrowding, that result in increased incidence of malnutrition and communicable disease like diarrhea, measles and acute respiratory infections. Children are mostly affected. They are left to the care of other family members or left to fend for themselves while their parents look for food resulting in: reduced dietary intake, inadequate quantity and quality of food, thus increasing malnutrition rates.

Girl Child

Specific expectations of masculine and feminine behaviors exist in Philippine society. Parental preferences for gender may result in unequal investment of resources and responsibility training. The girl child may be seen as weaker, vulnerable and in need of protection more than the boy child. Thus there are many restrictions for the girl child. These are gender segregation, play, aggression, disciplinary practice, and the development of social and sexual interests during adolescence.

Girls are likelier than boys to be underweight and stunted and to suffer from anemia and goiter. Early pregnancy threatens a girl child's health and nutrition and is more likely to result in complication and abortion as a family planning measure. Early motherhood places many burdens upon her and limits her educational opportunities.

Young girls are particularly vulnerable to HIV infection and STDs. Most victims of child abuse and prostituted children, are girls. A typical abused victim is an 11-year-old female child.

Special health needs of children in need of special protection involves mental health and psychological support services, environmental sanitation, nutrition, immunization and protection from and treatment of communicable disease.

Goal: Health and nutrition of children in need of special protection are improved.

National Objectives for Health by 2004

Health Status Objective

1. Reduce the morbidity and mortality rates among children in need of special protection.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase the awareness of families, communities and other health stakeholders of the needs of children in need of special protection
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Plan and formulate policy with focus on an integrated child protection program.
   (Baseline data is established in 2000)
2. Develop a package of health services for children in need of special protection in 30 percent of municipalities.
   (Baseline data is established in 2000)
3. Advocate, enact and enforce laws that promote welfare and protection of children in need of special protection.
   (Baseline data is established in 2000)
4. Develop and implement information and monitoring systems for early detection and intervention related to health and nutrition of children in need of special protection.
   (Baseline data is established in 2000)
5. Organize local councils for the welfare of children or child protection team in 30 percent of municipalities.
   (Baseline data is established in 2000)
6. Establish child crisis centers in all DOH hospitals and medical centers.
   (Baseline data is established in 2000)

WOMEN IN DIFFICULT CIRCUMSTANCES

Differences in gender roles put women in a lower and disadvantaged position, limiting their access to resources, including education, and their ability to promote and protect their health. There is a clear sign that gender interacts with poverty, literacy and other forms of discrimination to worsen women's ill health and impinge on their human rights.

Women make up 49.6 percent of the Philippine population (*NSCB*). They tend to outlive men by an average of five years. On the other hand, women have comparatively greater rates of illness, which seriously compromise their quality of life. Data show that these differences arise early and persist throughout their lives.

The number of women does not guarantee equal rights. While major changes in society have given more opportunities for women, they have a more complex, often difficult struggle to maintain the balance between family, household and economic responsibilities. The inequalities between women and men in all phases of life in the social and cultural dimensions call for a health care system sensitive to the needs of women, especially those in difficult circumstances.

Solo Parents

Female-headed households are increasing. Census figures show that the proportion of these households rose from 10 percent in the 1960s to around 14-15 percent at present. Available data further show increasing marital separations and out-of-wedlock births. Whereas female household heads in earlier periods were mostly widows, a considerable 16 percent of them today are younger, separated, abandoned or unmarried women (*Philippine Plan for Gender-Responsive Development, 1995-2025*).

Teenage Mothers

Early marriages and pregnancies are health risks not only to women but to the fetus as well. Young adolescent mothers are 4-5 times more prone to infection, seven times more likely to have toxemia, and have three times higher risk of mortality than older women. Teenage mothers get very little medical care during the critical first three months of pregnancy. A doctor sees only 29 percent of pregnant women below 20 years old (*NDHS 1998*). This lack of medical care is especially dangerous to teenagers for whom carrying a baby to term may be very stressful. Moreover, early marriage and early motherhood can severely af-

fect educational and employment opportunities and are likely to have long-term impact on society.

Women in Armed Conflict Situation

In the Philippines, militarization is still a serious social, political and economic problem. Thousands of people have suffered from the continued armed and violent confrontations in parts of the country, particularly in the south. Most unprotected in these situations are women who are left alone at home doing household chores and caring of children. The unstable conditions cause inadequate basic government services. Public health personnel are not available and medical supplies are inadequate. As a result, women in armed conflict situation have poor health, leading to high rates of maternal and infant death.

Women Victims of Domestic Violence

Getting accurate statistics on violence against women (VAW) is hard because it is often perceived as a "private matter." The "culture of silence" prevails in the home when it is confronted with problems related to domestic violence such as physical battering, psychological battering as a result of verbal abuse and sexual assault. Revelations of violence within the family bring about shame and scandal. Victims are pressured to bear their fear, pain and rage in silence for the sake of the family.

The incidence of domestic violence is estimated from one out of every 10 pregnant and lactating mother (*1993 Safe Motherhood Survey*) to 11 out of every 12 women (*Random Survey of 3 Depressed Communities in Metro Manila in 1991, Ramos-Jimenez, 1996*). Despite the passage of the Anti-Rape Bill in 1997, the number of repeated rape cases has not decreased. There were 7,400 rape cases in 1996, 7,800 in 1997 compared to 5,400 in 1995.

Factors Contributing to Poor Health among Women

There are several factors that lead to poor health among women. These include low social status of women, reproductive risks, inadequate gender-sensitive services and facilities for women, environmental hazards and contaminants.

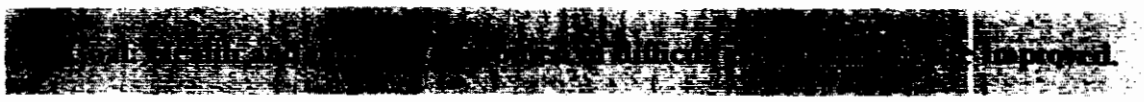
A 1995 World Bank report on the Asia-Pacific region pointed out that 30 percent of women above 15 years old are in low paying, low quality and low status occupation. Furthermore, a 1995 Human Development Report stressed that while women represent 41 percent of all workers in developing countries, women's wages are 30-40 percent less than men.

Their low social status in the family and community, their shorter educational periods, their heavy commitments to care for other family members are some factors preventing them from using health services for general care and adopting fertility control measures.

Malnutrition is more common among women than men. Because of their sex and physiologic state, women are more susceptible to anemia than men. This condition is particularly severe among pregnant and lactating mothers in difficult circumstances.

HIV/AIDS and other STDs, the transmission of which is sometimes a consequence of sexual violence, have a devastating effect on women's health, particularly the health of adolescent girls and young women. They often do not have the power to insist on safe sex and responsible sex practices and have little access to information and services for prevention and treatment. The consequences of HIV/AIDS and STDs reach beyond women's

health to their role as mothers and caregivers and their economic contribution to their families. Increasing participation of women in the workforce is considered risky because of reproductive health risks at work, especially during pregnancy and lactation. Other causes of morbidity and mortality in women are cancers, particularly breast and cervical cancer. Gender-sensitive facilities and services for women are still inadequate. They need to be strengthened to respond to women's needs.



National Objectives for Health by 2004

Health Status Objective

1. Reduce the morbidity and mortality rates among women in difficult circumstances.
   (Baseline data is established by 2000)

Risk Reduction Objectives

1. Increase the proportion of women participating in decision-making regarding their health.
   (Baseline data is established by 2000)
2. Increase the proportion of women who know and exert their health rights.
   (Baseline data is established by 2000)
3. Increase the participation of men in reproductive health.
   (Baseline data is established by 2000)

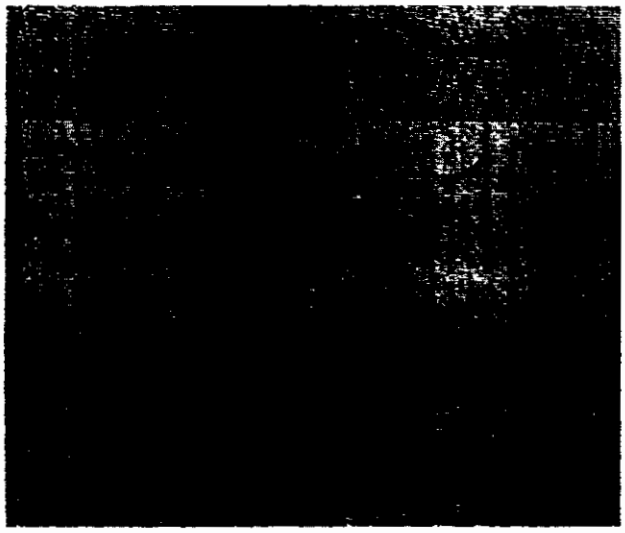
Services and Protection Objectives

1. Develop sound policies and action on gender and women's health issues.
   (Baseline data is established in 2000)
2. Increase the number of health workers trained on gender-sensitive and responsive integrated women health care.
   (Baseline data is established in 2000)
3. Increase the number of LGU's, other government organizations and NGOs participating in the design, implementation and evaluation of health policies and programs on women.
   (Baseline data is established in 2000)
4. Institutionalize women's and children protection units in all regional hospitals.
   (Baseline data is established in 2000)
5. Establish sex-desegregated data collection system.
   (Baseline data is established in 2000)
6. Provide health counseling, information, education, and communication and services on human sexuality, reproductive health and responsible parenthood at all provincial level facilities.
   (Baseline data is established in 2000)
7. Conduct research on prevention of violence against women, impact of gender perspective and risk-taking behavior of adolescent girls.
   (Baseline data is established in 2000)
8. Develop a package of health services for women in difficult circumstances.

PERSONS WITH DISABILITIES

Persons with disabilities (PWD) are those suffering from restriction of different abilities as a result of a mental, physical or sensory impairment or restriction in performing an activity in the manner or within the range considered normal for human beings. Disabilities may be classified as orthopedic impairment involving muscolo-skeletal or body movements, visual impairment, hearing impairment, mental impairment, general learning disabilities and multiple impairment.

Current assessment shows that there are 300-350 million people worldwide with moderate to severe disabilities. These disabilities are due to congenital or perinatal disturbances (15-20 percent), communicable diseases (about 20 percent), non-communicable somatic and mental conditions (40-45 percent) and trauma or injury (about 15 percent). In 1995, the United Nations Development Program (UNDP) estimated that 4-5 percent of any population is either physically or mentally disabled. Of the 7.4 million estimated cases in the country, only 0.76 percent was able to register during the National Registration of Persons with Disabilities (PWD) in the Philippines in 1997. Registered disabilities were attributed to orthopedic impairment (28 percent), visual impairment (26 percent), hearing impairment (17 percent), mental impairment (15 percent) and speech impairment (14 percent).



The Second National Blindness Survey conducted in 1995 by the University of the Philippines and the DOH showed a prevalence rate of 0.7 percent for bilateral blindness and 0.63 percent for monocular blindness. The most common causes are cataract, glaucoma, low vision and error of refraction, trauma, vitamin A deficiency and complications arising from measles and diabetes. Most visual disabilities can be prevented with simple primary eye care that can be done at the community level through early detection or screening and treatment.

The prevalence of hearing impairment is worse than that of blindness. WHO places hearing loss as the third most common disability next to rheumatism and hypertension. About 10 percent of the world's

population or 120 million have disabling hearing difficulties. About 1-2 babies per 1,000 live births are born deaf. A school-based study of 104,012 school children in the Philippines showed that about 10 percent are hearing impaired.

The nationwide prevalence, however, may approximate Thailand's national prevalence of 13.6 percent. About 50 percent of the causes of deafness are from the harmful effect of a drug or chemical substance on the organ of hearing (ototoxicity), ear infection (otitis media), excessive loud sounds (noise-induced hearing loss) and viral diseases like maternal German measles. Hearing disabilities can be prevented with education on the correct use of medications, early screening, treatment and correction of hearing disabilities.

A UNDP study showed that only 2-3 percent of PWD have access to rehabilitation services since most are in rural or semi-rural areas where these services are limited or non-existent. In the Philippines, there are 161 rehabilitation centers, mostly concentrated in major cities and urban areas. Community-based rehabilitation services offering alternative technologies that can be brought down to the community level and provide cost-effective way of delivering appropriate rehabilitation services would respond to the unequal access to health services. They would provide quality services to the majority of differently abled persons in rural areas. Community-based rehabilitation will provide more equitable opportunities, promote and protect human rights. At present, 46 out of 1,525 municipalities have community-based rehabilitation programs.

National Objectives for Health by 2004

Health Status Objectives

1. Limit the prevalence rate of disability in the general population to less than 4 percent.
   (Baseline data is established in 2000)
2. Improve disability-adjusted life years among those with visual and hearing impairment by 10 percent.
   (Baseline data is established in 2000)
3. Reduce the prevalence rate of blindness to 0.5 percent, with no community having a prevalence rate of more than 1 percent.
   (Baseline: 0.7 percent in 1995, Second National Survey of Blindness, Philippines, 1995)
4. Reduce the prevalence rate of hearing impairment to 15 percent
   (Baseline: 17 percent in 1997, National Registration of Person with Disability)

Risk Reduction Objectives

1. Increase the proportion of people who are aware of disability prevention measures to 50 percent
   (Baseline data is established in 2000)
2. Increase the proportion of neonates receiving hearing screen test and appropriate referral to 20 percent.
   (Baseline data is established in 2000)

3. Increase the proportion of school children receiving visual acuity test and appropriate referral to 50 percent.
   (Baseline data is established in 2000)
4. Increase the proportion of cataract patients given cataract surgery to 50 percent.
   (Baseline data for validation)
5. Increase the proportion of high-risk groups (0-5 year old children, pregnant and lactating mothers) given Vitamin A supplements to 100 percent.
   (Baseline data for validation)

Services and Protection Objectives

1. Increase the percentage of DOH hospitals with rehabilitation services to 50 percent and LGU managed hospitals with rehabilitation services to 20 percent.
   (Baseline: 14 percent of DOH Hospitals in 1998, HOMS)
2. Increase the percentage of municipalities in each province providing community-based rehabilitation services to 30 percent.
   (Baseline: 6 percent in 1998, CBRP Accomplishment Report)
3. Increase the percentage of communities and schools with primary ear and eye care seminars and services to 40 percent.
   (Baseline data is established in 2000)
4. Increase the proportion of mild and moderately disabled children 7 to 14 years old integrated in regular schools to 50 percent.
   (Baseline data is established in 2000)
5. Establish basic health services for indigent patients with disabilities in all government hospitals.
   (Baseline data is established in 2000)
6. Increase the proportion of DOH hospitals with ophthalmology service to 50 percent and LGU-managed hospitals with ophthalmology service to 20 percent.
   (Baseline: 22 percent of DOH hospitals in 1998, HOMS)
7. Develop a package of health services for persons with disabilities.

RURAL POOR

Poverty is "a deprivation in relation to a social standard, or a lack of the minimum entitlements of households in society, which the government must seek to provide, either directly or indirectly."

In the Philippines, poverty is measured against a total poverty threshold. This threshold is determined by a "minimum income requirement needed by a family to purchase a specific set of freely provided basic goods and services." The proportion of families falling below the threshold is called poverty incidence. Between 1988 and 1991, the poverty incidence in the country hardly improved, from 40 percent (1988) to 39 percent (1991). The number of poor families actually increased by 11 percent.

In the context of human development, poverty is "the sustained inability of a household to meet its minimal set of capabilities for human physical, intellectual and psychological functioning or minimum basic needs (MBN)." Extending people's capabilities sufficiently for them to meet their MBN makes the alleviation of poverty a human development approach.

The Presidential Commission to Fight Poverty broadly categorized MBN indicators into three: survival, security and empowerment (or enabling needs). The commission set eight basic indicators relating to the MBN to get an index of deprivation in the country. The indicators are:

1. Number of families below the official poverty line
2. Incidence or proportion of poor families below the official poverty line
3. Infant mortality rates
4. Malnutrition rates
5. Cohort survival rates
6. Adult illiteracy rates
7. Proportion of households without access to safe water
8. Proportion of households without access to sanitary toilets

The 10 provinces with the lowest MBN index are: Sulu, Maguindanao, Masbate, Cotabato, Ifugao, Zamboanga del Sur, Basilan, Zamboanga del Norte, Lanao del Sur and Agusan del Sur. The content of the government's antipoverty programs in each of these provinces depended on the specific groups of the poor predominant in each area:

1. Lowland landless agricultural workers
2. Lowland small farm owners and cultivators
3. Upland farmers
4. Subsistence fisherfolks
5. Industrial wage laborers
6. Hawkers and microentrepreneurs
7. Scavengers

Low productivity and income is the result of the low level of literacy and skills among the rural poor. This situation is worsened by the lack of access to basic infrastructure services that can raise productive outputs. Moreover, an inadequate basic social service results in poor health and welfare that limits prospects of the rural poor for a better life.

Since the rural poor have the least occupational alternative, they depend on inferior resource bases that yield low income. Migration to urban centers and resource-rich areas becomes an option. Mechanisms that deliver basic services to the rural poor are often unresponsive to their fate and needs.

Because the nature and intensity of their needs are diverse and the causes of poverty vary, solutions to their problems differ. The approach to poverty alleviation needs to distinguish between the different poor groups, between the poor and the "core poor," between the "less poor" and "subsistence poor." In view of this, the commission adopted five principal strategies:

1. Revive economic growth to create employment and livelihood
2. Sustain growth based on people-friendly approaches
3. Expand social services to provide MBN
4. Foster sustainable income-generating community projects
5. Build capabilities of the poor to help themselves
6. Emphasize the importance of local action.

The MBN approach to poverty alleviation, which focuses program resources on identified priority poor municipalities, aptly addresses social inequities among various groups of the poor. Among the top five MBN in the country are: family with income below subsistence threshold level, family without sanitary toilet, family with no access to potable water within 250 meters, children 3-5 years old not attending day care or preschool, and housing not durable for five years. The CIDSS set a 20 percent target to meet unmet MBN in priority provinces for one year, but achieved a higher average of 52 percent reduction of the top MBN.

MBN projects for the rural poor include nutrition, maternal and child health, dental health, care for the elderly, communicable disease prevention and control, traditional medicine, among others. These community health projects were provided especially to fifth and sixth class municipalities using poverty alleviation funds.

Goal: Health and nutrition of rural poor families are improved.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the percentage of newborns with birth weight less than 2.5 kilograms.
   (Baseline data is established in 2000)
2. Reduce the percentage of severely and moderately underweight children under five years old.
   (Baseline data is established in 2000)
3. Reduce the incidence of diarrhea cases among children below five years old.
   (Baseline data is establised in 2000)
4. Reduce the percentage of death due to preventable causes in poor families.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase the percentage of infants breastfed for at least six months.
   (Baseline data is established in 2000)
2. Increase the percentage of poor families availing health services.
   (Baseline is established in 2000)
3. Increase the percentage of families utilizing any type of sanitary toilet.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the percentage of pregnant and lactating mothers provided with iron and iodine supplements
   (Baseline data is established in 2000)
2. Increase the percentage of deliveries attended by trained personnel.
   (Baseline data is established in 2000)
3. Increase the percentage of fully immunized children.
   (Baseline data is established in 2000)
4. Increase the percentage of pregnant women given two or more doses of tetanus toxoid
   (Baseline data is established in 2000)
5. Increase the provision of food supplements using indigenous local processed foods to underweight infants aged 6-24 months old and iron drops to LBW and diagnosed anemic infants 6-11 months old.
   (Baseline data is established in 2000)
6. Increase the percentage of severely and moderately underweight under five-year-old children registered in feeding programs
   (Baseline data is established in 2000)
7. Increase the percentage of couples provided with family planning service
   (Baseline data is established in 2000)
8. Increase the percentage of households with access to safe water supply
   (Baseline data is established in 2000)
9. Increase the percentage of households with sanitary toilets.
   (Baseline data is established in 2000)
10. Develop a package of health services for rural poor families.

URBAN POOR

Domestic Environment

Rapid urbanization and migration have brought about negative consequences such as slums and squatters, overcrowding, poor sanitation, environmental degradation and pollution. Studies and field researches have shown that the urban poor have less access to health and nutrition services than the rural poor. However, the urban poor have better access to educational services. Only about 6 percent of urban poor had no schooling whereas 10 percent of rural poor had none. Overall, 35.9 percent had an income below the poverty line and 21.3 percent had an income below the food line. About three-fourths were employed. The median monthly income was P933.

Based on a study of urban poor communities, 72.2 percent of households had access to piped water or tube wells. Seventeen percent of water samples were heavily contaminated by fecal organisms at source. Two-thirds of households tried to protect their drinking water and more than one-fourth boiled it. Many households lacked sufficient water to wash utensils properly, and their water containers and water handling practices were inadequate.

Over 16 percent of households lacked toilet. The consequences were that 21.4 percent of people defecated into a waterway and 14 percent used the so-called "wrap-and-throw" method. Twenty-eight percent of households reported that garbage was not collected at all. Most commonly, uncollected garbage was burnt (17.5 percent), dumped elsewhere (14.6 percent) or thrown into waterways (8.1 percent). Other environmental problems include the proliferation of mosquitoes and other insects, rats and domestic animals.

The commonest cooking method was gas, followed by kerosene and electricity. The remainder used biomass fuels such as wood, coconut shell, and charcoal. Households were unlikely to store uncooked food.

Most households slept in one room. The mean number of persons who slept in the house was 5.5.

Maternal Health

The total fertility rate of urban poor women 15-49 years old (4.04 births) was lower than rural women (4.82 births). The crude birth rate was 34 per 1,000 among the urban poor, much higher than the rural poor population (30.9 per 1,000).

Maternal death rate in the urban poor communities under the Urban Health and Nutrition Project (UHNP) was at least 3 deaths per 1,000 livebirths a year. Seven percent of women had three prenatal visits to a health facility and 62.2 percent made four or more visits. Only 8 percent of women failed to have prenatal visits at all.

Problems related to the quality of prenatal care include inadequate laboratory examination; less internal examination performed; inadequate iron tablet supplementation, and poor referral of high-risk group. Reasons for delivering at home were cost, convenience, and presence of a supportive social network. Even after delivery, the overall quality of postnatal care is low.

About 86 percent of mothers had ever breastfed their babies. The reasons commonly given for not breastfeeding were insufficient milk, illness or weakness of the mother, refusal by the infant, and a problem with the breast or nipple.

Most mothers introduced weaning foods between the fourth and sixth months of life. By age 7-9 months about 58 percent were still breastfeeding. They saw many advantages of breastfeeding, including emotional bonding between the mother and child, and cost.

Child Health

The infant death in the urban poor population is at least 50 per 1,000 live births based on UNHP reports. By age 12 months, 92.5 percent of infants had received BCG vaccine, their third dose of diphtheria, pertussis and tetanus vaccine (88 percent) and their third dose of oral polio vaccine (82.4 percent). On the other hand, only 38.6 percent had received measles vaccine by age 12 months and 67.0 percent by age 15 months. Coverage showed little correlation with maternal background factors.

Acute respiratory infections (ARI) are the leading cause of death in early childhood. Unfortunately, in the survey made, a high percentage of mothers failed to see the significance of cough with fast breathing or chest indrawing. Diarrhea and ARI are leading causes of illness. Traditional home treatment is frequently practiced. Problems on late referrals to the hospital occur because dehydration and pneumonia are not recognized at once.

Over 50 percent of the urban poor children carried intestinal parasites, with the highest prevalence in children 5-9 years old. Over 7.5 percent of the urban poor were stunted as a sign of chronic malnutrition as against 5.6 percent of the general population.

Attitude towards health services

The women were conscious that health services were free, easily accessible and provided satisfactory child health services. On the other hand, they criticized poor interpersonal relationships with the staff, long waiting times, and the absence of particular health staff. They thought that existing government health services were providing narrow support for maternal and child health (MCH) and saw the need for wider range of services

Goal: Health and nutrition of urban poor families are improved

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the infant and child mortality and morbidity rates in the urban poor areas.
   (Baseline data is established in 2000)
2. Reduce the maternal mortality and morbidity due to direct obstetrical causes.
   (Baseline data is established in 2000)
3. Reduce protein-energy malnutrition (PEM) and micronutrient deficiencies among children below 5 years old.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase the practice of multi-mix daily diet among under two-year-old children to 90 percent.
   (Baseline data is established in 2000)
2. Increase the practice of multi-mix daily diet among women to 90 percent.
   (Baseline data is established in 2000)
3. Increase the percentage of infants exclusively breastfed up to six months to 80 percent.
   (Baseline: 58 percent in 1996, UHNP)
4. Improve personal hygiene and sanitary practices.
   (Baseline data is established in 2000)
5. Increase the percentage of mothers and children availing of maternal and child health services to 90 percent.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the percentage of urban poor with access to quality MCH care, nutrition, and other health services at the local level to 90 percent.
   (Baseline data is established in 2000)
2. Increase the percentage of infants fully immunized to 95 percent
   (Baseline data is established in 2000)
3. Formulate and concretize the urban poor development plan at the local level.
   (Baseline data is established in 2000)
4. Establish empowered community-level health and social support groups
   (Baseline data is established in 2000)
5. Increase the percentage of households with access to safe water to 80 percent
   (Baseline: 72.2 percent in 1996, UHNP)
6. Increase the percentage of households with access to sanitary toilet facilities to 70 percent.
   (Baseline: 64.6 percent in 1996, UHNP)
7. Develop a package of health services for urban poor communities

INDIGENOUS PEOPLES

Indigenous peoples (IP) are officially referred to as cultural communities. These communities retain a distinct ethno-political, economic, social and cultural identity characterized by adherence to tribal traditions, customs, values or systems of thought. Indigenous peoples comprise about 18 percent (13 million) of the total Philippine population, unevenly distributed over 110 major and minor ethnolinguistic groupings spread over Luzon, Visayas and Mindanao (*UNDP, ILO 1997*). Most indigenous peoples are in Abra, Ifugao, Mountain Province, Kalinga, Apayao, Cagayan, Davao City, Davao del Norte, Lanao del Sur, Sultan Kudarat, North Cotabato, Agusan del Norte and Sur and Zamboanga Del Norte and Sur. The Muslims do not consider themselves indigenous peoples but nonetheless they make up a special population group considered among the most disadvantaged.

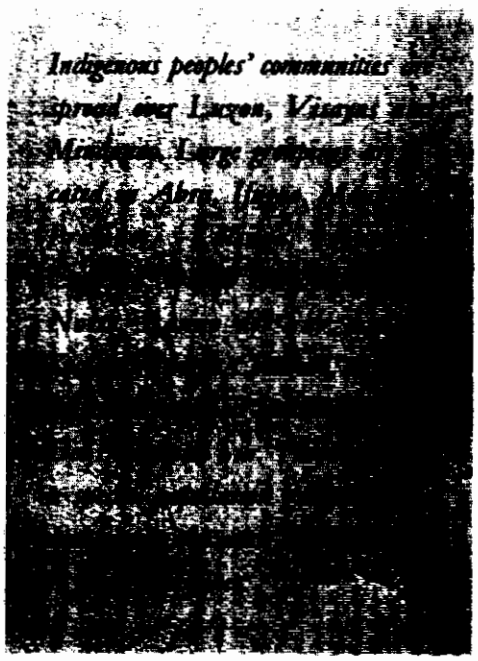
With their population size, indigenous peoples can substantially affect national goals and objectives in health and health-related services.

Socioeconomic, geopolitical and cultural factors have driven these communities to the poorer sections of the countryside where access to basic health care and other services is poor or none at all. These places have been described as hard to reach, unattractive to health providers, deprived, depressed, underserved (or worse, unserved) and critical in terms of high health risks and precarious peace and order.

A considerable number are still nomadic or semi-nomadic. Even groups with established settlements leave their permanent dwellings during certain times of the year to look for food and livelihood.

Families in many cultural communities are known to leave their houses after a serious illness or death has come upon an immediate member. Names are changed to confuse evil spirits, which are believed to cause disease. Births are celebrated in rites but are not registered. Taboos, use of plant decoction and misconceptions generally comprise their health-related beliefs and practices. Traditional birth attendants (TBA) are preferred over midwives, nurses and doctors because TBAs rarely touch body parts.

Culture-based practices contribute to the difficulty in doing surveys and point to the need for innovative and culturally appropriate health services distinct from those for the mainstream.



The most common illnesses and disorders prevalent in indigenous peoples' communities are: cholera, dysentery, parasitism, diarrhea, hepatitis, malaria, goiter, tuberculosis, polio, measles, pneumonia, and skin diseases. Malnutrition is a common problem not only for preschoolers but also for nursing mothers. These imply inadequate environmental health and sanitation services and facilities. Addressing the health concerns of indigenous peoples poses several challenges and concerns.

Data on indigenous peoples are severely limited. Without data, targets are hard to set even though professional consensus exists that indigenous peoples are at considerably higher risk than the total population. One answer to the challenge is to build better data systems so that health threats facing various groups can be adequately defined and appropriate preventive interventions can be done.

Indigenous peoples are heterogeneous and variations within each major grouping are extensive. The indigenous peoples of Mindoro, for example, may be lumped as Mangyans, but there are seven distinct groups among them, culturally speaking. The challenge is to refine our knowledge and understanding further in order to translate health policies into more culturally appropriate and culturally sensitive community-based programs and services.

Indigenous peoples in far settlements have a hard time reaching health services due to difficult terrain, lack and high cost of transport facilities which are more formidable during the rainy season. Insufficient knowledge of existing services, irregular and insufficient service providers and medical supplies discourage the indigenous peoples from using these services.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce morbidity and mortality among indigenous peoples.
   (Baseline data is established in 2000)
2. Improve the nutritional status of indigenous peoples.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase the practice of personal hygiene and use of safe water and sanitary toilet facilities by 30 percent.
   (Baseline data is established in 2000)
2. Increase knowledge, attitude and practice of basic health habits among indigenous peoples by 30 percent.
   (Baseline data is established in 2000)
3. Increase access to and use of health services among indigenous peoples by 30 percent
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Undertake demographic and health surveys on indigenous peoples, using MBN survey instruments and other community profiling tools.
   (Baseline data is established in 2000)
2. Increase research initiatives on indigenous medicinal plants and healing practices, and appropriate and sustainable health system for indigenous peoples.
   (Baseline data is established in 2000)
3. Formulate health standards, policies and plans appropriate for indigenous peoples.
   (Baseline data is established in 2000)
4. Increase the number of cultural communities provided by LGU's and national government agencies with appropriations for health and other minimum basic need by 30 percent.
   (Baseline data is established in 2000)
5. Increase the number of cultural communities assisted by NGOs in setting up and sustaining people's organizations (POs) for health and development by 30 percent.
   (Baseline data is established in 2000)
6. Increase the number of local health personnel providing services appropriate for indigenous peoples.
   (Baseline data is established in 2000)
7. Provide 4,200 indigenous peoples' communities with technical, institutional and financial assistance to enable them to set up and sustain POs for health and social development.
   (Baseline data is established in 2000)
8. Increase health services for control of communicable diseases, malnutrition and environmental sanitation by 30 percent
   (Baseline data is established in 2000)
9. Develop a package of health services for indigenous peoples.

MIGRANT WORKERS

The 1995 NSO data showed that there were 782,297 overseas workers (OFWs) out of the 68.5 million population or 1.1 percent of the total population. Based on the 1995 Philippine Human Rights Plan, the most recent official estimate of OFWs stands at 4.2 million. Of these, 2.4 million are documented, 1.8 million are undocumented or illegal workers. The average yearly deployment is 650,000 people.

During the past 10 years, there has been an increasing number of female OFWs. Currently the ratio is fairly even (51.65 percent male). Most workers were in their prime, below 35 years old, with the highest proportion of OFWs between 25-34 years old (39 percent). There were more young female (64 percent) in the age bracket below 35 years. Ninety-three percent of the males were married, while only 48 percent of the females were married. Most of the OFWs were educated with 30 percent holding academic degrees.

The NCR, Regions 1, 3 and 4 are the top exporters of Filipino workers. The bulk of Filipino workers were employed in the Middle East countries, mainly in Saudi Arabia, while the rest were in Taiwan, Hongkong and Japan. A small percentage were in Europe, particularly Italy, and Nigeria in Africa. Service, production, transport, equipment operators and laborers are the major sources of occupation abroad. Females employed as domestic helpers and in related housekeeping work dominate service work. The male workers dominate production, transport, equipment operation and other physically demanding work.

The workers most vulnerable to human rights violation are the undocumented workers who leave the country as tourists. They are easy prey to illegal recruiters who charge exorbitant fees without the benefit of any employment contract with terms and conditions duly approved by the government. Hence, they are left entirely to the mercy of their recruiters and employers. They fear deportation due to their illegal status. The profile of the country: culture, food, climate, people, peace and order, implementation of laws, occupational and environmental conditions peculiar to the place are the major contributory problems in overseas work.

A 1987-90 Retrospective Study of 2,972 records of deceased OFWs showed that most deaths were in land-based employment, mostly married males, relatively young between 30-44 years old, and within one year of employment. The

cause of death may be due to the risks involved in their jobs. Saudi Arabia has the highest incidence of death occurrence at 34 percent. Forty-two percent were in the production process work and transport. The causes of death may be attributed to physical stress, abuse or maltreatment, prolonged absence from families, stress and cultural shock.

Table 19. Leading Causes of Morbidity and Mortality Among OFWs, 1987-1990

Cause of Death	%	Cause of Illness	%
Cardiovascular	38	Accident	46
Accident	22	• on job accident	40
• vehicular	10	• unknown	5
• hit by [illegible]	2	• vehicular	2
Cancer	12	Cancer	8
• cancer [illegible]	4	• cancer of nasopharynx	4
• cancer [illegible]	3	• lungs	1
Missing	8	Cardiovascular disease	7
Drowning	3	Hernia	3
Asphyxia	5	Eye diseases	2
Poisoning	2	Uremia	1
Murder	1		
Hanging	0.2		

There were 3,494 reported cases of various illnesses. Reports of illness is most common in males deployed at sea who are between 30-39 years old and married. The salary range of those males who died or got sick was between P5,000-9,999 a month.

The working conditions predispose OFW's to various physical, psychological, social, and mental health problems. Problems encountered mostly by domestic helpers are lack of privacy, being made to sleep on the floor or couches, beatings and physical assault, long working hours, illicit relations, drugs and prostitution, cultural adjustments, religious and moral crisis, rape and molestation. Inadequate facilities and industry hazards pose dangers, resulting in accidents and injuries. Mental breakdown among OFW's, especially illegal workers, results from fear of deportation and severe penalties, loneliness, homesickness, and family problems.

Goal: Health status of overseas Filipino workers is improved.

National Objectives for Health by 2004

Health Status Objective

1. Reduce the mortality and morbidity from occupational diseases and injuries among OFW's by 10 percent.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase knowledge and practices on occupational health and safety in all documented OFW's.
   (Baseline data is established in 2000)
2. Ensure health certification in 100 percent of OFW's before departure.
   (Baseline data is established in 2000)
3. Ensure physical and psychological screening and management in at least 50 percent of returning OFW's.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Establish information system on the health situation and health needs of OFW's.
   (Baseline data is established in 2000)
2. Formulate and implement program, policies and standards on occupational health and safety of OFW's.
   (Baseline data is established in 2000)
3. Include occupational health services, counseling and medical care in the production of primers, advisories, manuals and pre-departure seminars for OFW's.
   (Baseline data is established in 2000)
4. Support the ratification of the international convention on the protection of the rights of all migrant workers and members of their families.
   (Baseline data is established in 2000)
5. Monitor and regulate accredited medical clinics and hospitals in ensuring the quality of medical examination and services given to OFW's.
   (Baseline data is established in 2000)
6. Monitor and regulate recruiting agencies in ensuring the health and safety of OFW's.
   (Baseline data is established in 2000)
7. Increase the number of trained staff in handling crisis intervention and counseling at the different Philippine embassies.
   (Baseline data is established in 2000)
8. Develop a package of health services for migrant workers.
   (Baseline data is established in 2000)

HEALTH AND THE ENVIRONMENT

There is a deepening sense of public concern over the serious health consequences resulting from adverse environmental changes brought about by development, new technologies, trade and industrial policies that favor the unmitigated influx of hazardous consumer products, materials and stocks. The large and increasing mass of by-products and residues dumped and pushed over time with little or no appropriate precautions generate significant damage costs – pollution affecting the air, water and land that provide life support to people and ultimately – to human health.

Pollution brougth about by industrial and fossil-fuel fired emissions and vehicular gas fumes adversely affect air quality and contribute to the most serious global enviromental threat – global warming or climate change. The danger is so great to health and life, that solutions to the problem require universal action. Individual countries are encouraged to take measures to prevent global warming and promote clean air. In the Philippines, it may take some time to impose strict standards to reduce harmful emissions from the industrial and transport sectors, although most recently Congress passed the much-awaited Clean Air Act. These moves are significant in the light of increasing incidence of asthma, chronic lung diseases and other illnesses associated with air pollution.

Disposal of solid and liquid wastes has reached serious proportions and require reliable and appropriate disposal management strategy. The wastes elimination capacity of the environment is not infinite and nature herself continuously bring them back in various hazardous and toxic forms and elements, including disease-carrying virus and bacteria. Wastes in oceans, rivers and other water resources poison and eventually kill most marine life and compromise as well one of man's biggest source of food and other life giving by-products. Solid wastes dumped on landfills and open dumpsites are sources of acidification, nitrates and coliform bacteria that contaminate groundwater sources. Exposure to smoke and fumes from burning wastes in dumpsites increases the risks of developing poor health.

Cities attract people for the opportunities and additional welfare they offer and generate. Unfortunately, location places for migrants who are mostly poor and with little skills and education are fringes of space or derelict inner sections of cities that are unsightly and congested to begin with. Access to safe water supply is a major problem in such areas and contribute to the proliferation of diseases

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associated with contaminated water, inadequately cleaned or prepared food and poor personal hygiene and sanitation. Crowded places favor vectors and vermin, resulting in the increasing incidence of outbreaks of vector-borne and vermin-related diseases. Health hazards and threats to life, including violence and crime also abound in crowded places.

In the rural areas, access to safe water supply and availability of sanitation facilities remain as major problems that should be addressed immediately. These are basic needs, the lack or inadequacy of which can compromise the health of the people. Sanitary food preparation remains wanting in most rural households. Lack of sanitation facilities and reckless waste disposal practices undermine environmental sanitation. All these are major factors responsible for the high incidence including outbreaks of water-borne and food-borne diseases such as diarrhea, cholera and typhoid fever.

In the workplaces, new technologies and manufacturing processes bring with them harmful conditions and hazardous substances and materials that are threats to the lives and limbs of workers. The lack of necessary health and environmental safeguards characterize the state of our workplaces and which account for ill-health and problems related to cardio-respiratory and musculo-skeletal systems and traumatic injuries. Musculo-skeletal disorder has been noted as the main cause of both short-term and permanent disability among workers.

Health promotion and protection under these conditions are urgent needs that must be addressed immediately by the public health system. In order to promote health among people and protect communities from the increasing threats from poor environment, the goals and targets of health include the promotion of healthy environment starting from the homes, schools, workplaces, communities and cities. Simple household practices involving solid and liquid waste management (which continue to be carelessly done at the household level), personal hygiene and food and water supply sanitation will be encouraged and promoted. The combined actions of individual households with regard to these practical solutions could generate positive effects on the health status of the population. Neighborhood networks can be critical to community well-being and provide the impetus to the achievement of bigger health goals. Health programs and services and health protection activities in workplaces and schools are substantial contributions to health development. Furthermore, responsible manufacturing and clean technology mitigate not only hazards to health but threats to the environment as well. Without doubt, it can no longer be denied that only a healthy environment can sustain healthy life.

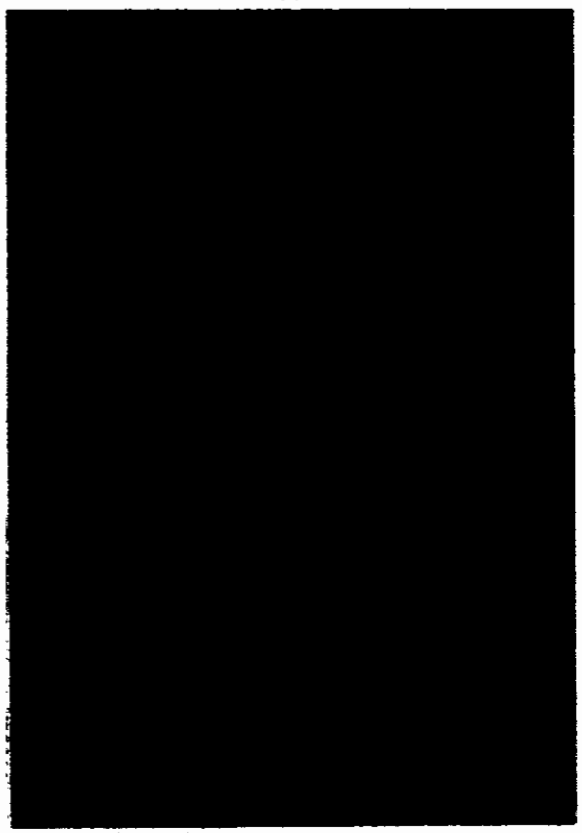
ENVIRONMENTAL HEALTH

As the Philippines becomes an industrialized country and its population expands, certain adverse environmental changes that may have serious health consequences remain to be the major environmental health challenge. These conditions include inadequate water supply and poor sanitation facilities; poor housing and shelter; unsafe food; high presence of disease vectors; air, water, and soil pollution; toxic and hazardous wastes, including health care wastes; and unsafe use of chemicals. These conditions exist in households, communities, industries and workplaces.

Drinking Water and Water Pollution

Water is a vital natural resource. An adequate and safe water supply is essential for daily life functions, such as drinking, food preparation, personal hygiene and sanitation. It is also essential in delivering basic goods and services to the people, including food production, product manufacturing and the maintenance of the ecological system.

Figure 49. Household Access to Safe Water, by Province, Philippines 1995



Source: EHS-DOH

The country has abundant sources of water. It is used for domestic purposes (48 percent), irrigation (68 percent), power generation (63 percent), industrial processes (15 percent) and commercial purposes (8 percent) (*NIFRB 1997*). From 1960 to the present, there has been a significant increase in households with access to safe water at average rate of 2 percent increase yearly. About 87 percent of the total households have access to safe water supplies with 91 percent of households from urban areas and 71 percent of households in rural areas (*NHDS 1998*). Drinking water supplies come from Level I (39 percent), Level II (18 percent), Level III (30 percent) and doubtful sources (13 percent). Sixty-two per-

cent of households take between 1-15 minutes to draw water from the source and bring it to the households which implies a better access to water supply.

A baseline study under the Urban Health and Nutrition Project (UHNP) in 1995 showed that majority (72 percent) of households among slum dwellers have access to piped water or tube wells. However, 36 percent of the water were contaminated at the point of consumption than it had been at source (17 percent). This was due to improper transport, handling and storage of drinking water.

Over 30 percent of households were not cleaning water containers regularly and covering them during transport and storage. Boiling is one means of treating drinking water. However, the 1993 National Health Survey (NHS) revealed only 10 percent of those households getting drinking water from doubtful sources, boil their drinking water.

Groundwater has been the substantial source of municipal water, representing about 45.5 percent. However, the recent increase of groundwater use in the country has highlighted the issues and problems that include the intrusion of saline water into aquifer, pollution of groundwater and ground subsidence.

The saline water intrusion is due to the insufficient and declining groundwater recharge rate and geological conditions. Metro Manila and Metro Cebu encounter serious saline water intrusion problems. Overexploitation of groundwater is the common cause of problems. Urbanization also reduces the amounts of groundwater recharge due to covering of land with concrete, asphalt and other impervious materials.

Despite improvements in providing safe water supply, water resources have not been spared from pollution. Human settlement, industry and agriculture have considerably polluted both inland and coastal water.

The quality of inland water has never been adequately monitored regularly nor have there been in-depth studies on freshwater bodies except on Laguna Lake. It was reported in the late 1970s' that 50 rivers were seriously polluted while 40 are biologically dead. From 1989 to 1992 the government monitored and assessed only 75 rivers and 10 are categorized dead rivers. Freshwater bodies in the country consist of 421 rivers, including major river basins, 58 natural lakes and more than 10,000 hectares of freshwater swamps.

The country has a coastal length of 17,460 kilometers, the fifth longest in the world. Its territorial waters cover 212 million hectares. Coastal zones are home to coral reefs, 2,000 known fish species as well as birds, fish, algae, mollusks, seagrass beds and seaweed communities. Seventy percent of our country's population lives in coastal areas, and about 15 percent of all fishing operations in the country are carried out in the coastal zones.

Causes of coastal degradation range from cyanide and blast fishing, sewage and industrial effluents, mine tailings, deforestation, siltation, oil spills, agricultural runoffs and unmindful tourists. Manila Bay, for example, serves as an archetype of other coastal areas. The bacterial count in the bay, particularly the

eastern portions, has reached levels high enough to declare the beaches in the area as unfit for bathing. Studies of pollution in Manila Bay showed the presence of different pollutants: pesticides, oil, sewage, industrial effluents and heavy metals.

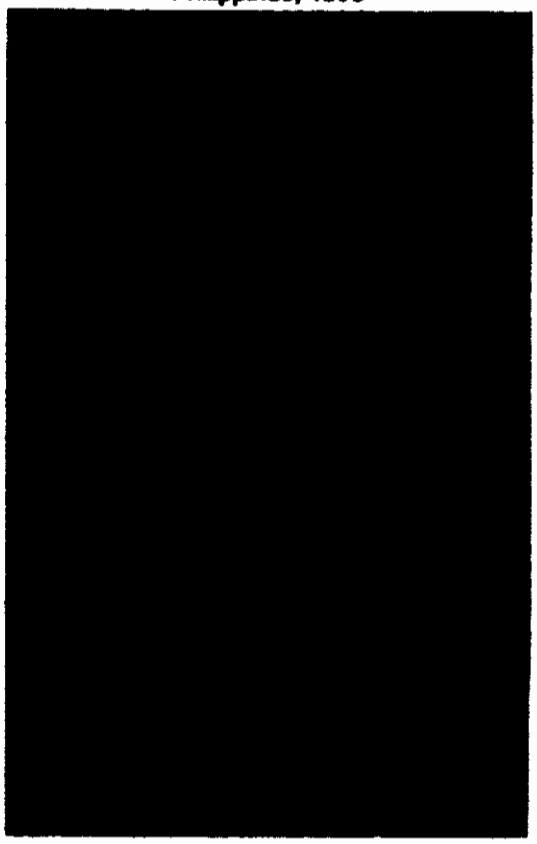
The Marcopper case is a good example of pollution caused by mining companies to coastal waters. The company used to dump 20,000 tons of mine tailings daily into Calancan Bay, building a 4.2-kilometer causeway in the Bay. Between 1976 and 1978, water analysis in Calancan Bay yielded high concentrations of heavy metals such as copper, cadmium and lead. The presence of mine tailings in coastal waters poses similar problems in Toledo City in Cebu, the east cost of Cebu as well as Southern Negros.

"Red tide" is a special environmental and health problem. Although the occurrence of the red tide was recorded in Bataan as early as 1908 and almost yearly thereafter, it was not reported to be toxic until 1983. The toxic plankton blooms contaminate shellfish and make them toxic to man. The red tide has caused many deaths and economic losses to the shellfish industry. There are conclusive studies on the causes of red tide to predict its occurrence. To date, red tide is occurring in Manila Bay; Masinloc waters in Zambales; Balite and Pujada Bays in Davao Oriental, Dumanquilas, Sibuguey and Illana Bays in Zamboanga del Sur; Barobo waters, Lianga Bay and Hinaluan waters in Surigao del Sur; Malampaya Sound in Palawan; Milagros, Mandaon and Asid Gulf in Masbate; Maqueda and Villareal Bays in Western Samar; Banago waters in Bacolod City; Victorias waters in Negros Occidental; Juag Lagoon in Matnog, Sorsogon; Tanguines Lagoon in Camiguin Island; Cancabato Bay in Tacloban City; Calbayog waters in Calbayog City and Tinagong Dagat in Capiz.

Solid and Liquid Wastes

Disposal of solid and liquid wastes has reached serious proportions, particularly in Metro Manila and other urban centers, to the extent that it contributes a lot to the pollution of water and food resources. The wastes we dump in our oceans are greater than the fish we take out. Each year, around 100,000 marine mammals die from ingesting waste or becoming entangled in plastic that ends up in the sea (*Cinger's Guide to Environmental Laws*).

Figure 50. Household Access to Sanitary Toilet, by Province Philippines, 1995



Source: EHS-DOH

In 1998, about 19 percent of households or 2.3 million households did not have access to sanitary toilet facilities. Around 92.3 percent of the urban population had access to sanitary toilets compared to 69.8 percent in the rural communities (*NDHS*). It is also estimated that only about 7 percent of the population are connected to sewer. Access to sanitary toilet facility, either household or public toilet, remains a problem. According to the 1995 Urban Health and Nutrition Baseline Studies, some reasons for not having a toilet were lack of space and money to build one.

The disposal of solid wastes is another major health problem of the country. Common means of disposal are open dumpsites. The Payatas dumpsite in Quezon City is a source of acidification, nitrates and coliform bacteria in groundwater along the dumpsite (*Bacud et al 1994*). Ninety percent of drinking water samples from the Smokey Mountain dumpsite were positive for bacterial contamination.

Exposure to smoke and fumes from burning wastes by people who live near these dumpsites increases their risks of developing poor health. Particulate levels in the ambient air of Smokey Mountain were way above the air quality standards. Carbon monoxide levels ranged from normal to dangerously high. The health of children who scavenged in Smokey Mountain before it was closed was worse than that of child street vendors (*Torres et al 1991, Subida and Torres 1994*). Among child scavengers, the prevalence of bronchitis was 31 percent and asthma was 29 percent. Pulmonary function was below normal in more than half of the children. About 73 percent of the child scavengers had blood lead levels above 20 mg/dL, compared to 10 percent among school children and 33 percent among street child vendors.

The 1998 NDHS study showed that the means of solid waste disposal by households includes individual burning (48 percent), municipal garbage collection (30 percent), open dumping (6 percent), composting (4 percent) and burying (5 percent).

In Metro Manila, about 5,507 tons of wastes are generated a day (*MMDA 1997*). About 90 percent of the wastes are collected, of which 21 percent are illegally dumped, 6 percent are burned or buried by waste generators and only 3.6 percent are recycled.

The issue of toxic and hazardous solid wastes from industrial operations and health care facilities is another major environmental health concern. A 1995 study on the status of hospital wastes management in 45 DOH hospitals in the Philippines, showed that of the less than 5,000 kilos of wastes generated a month by these hospitals, 20 percent represented hazardous waste (*EHS-DOH 1995*). About 80 percent of the hospitals practiced pre-treatment of their hazardous wastes, mostly by chemical disinfection. Only 71.4 percent of the hospitals practiced wastes segregation, some 27 percent practiced wastes incineration, 18 percent buried their wastes and about half practiced wastes recycling.

A more recent study of 144 private and government hospitals in Metro Manila showed that only 86 percent were practicing wastes segregation and 59 percent were pre-treating their hazardous wastes either by chemical disinfection, autoclaving and delay-to-decay (*EHS-DOH 1997*). Wastes collec-

tion was done by the MMDA (38.9 percent), private contractors (35.4 percent) and by networking with other hospitals with incinerators (12.9 percent). Seventy-four of the hospitals disposed their wastes by incineration. Only 80 hospitals practiced wastes recycling.

Soil Degradation and Food Contamination

Other environmental factors threatening the health of Filipinos are soil degradation and food contamination. Soil degradation is present in the form of wind and water erosion, acidification, salinization and contamination with pollutants that may consist of harmful chemicals or disease-causing microorganisms.

Soil erosion is the most serious type of soil degradation because it directly influences food production and the subsequent effect on human nutrition (*DOST 1998*). The 1993 report by the Bureau of Soils and Water Management (BSWM) showed that soil lost to severe erosion reached approximately 5.2 million hectares, while 8.5 million hectares were moderately eroded and 8.8 million hectares were only slightly eroded.

A major factor that worsens the present erosion rate is deforestation. Philippine forests are getting smaller. In the 1950s, the forest cover was about three-fourths of the country. Further deforestation occurred, diminishing the forest to half by the 1970s, and to about one-fourth by 1998 (*Gamalinda et al. 1993*). As of 1994, only about 5.6 million hectares of commercial forests and 800,000 hectares of virgin forests remain. This condition is primarily caused by illegal logging, conversion of land to agricultural and residential areas, natural calamities, shifting cultivation, and forest fires (*DENR 1996*).

Acidification may result from natural occurrences or from human activities. Natural acidification results from loss of some indigenous chemicals in the soil and leaving behind the acidic chemical component especially in places where rainfall is more frequent. Acidification may also result from the increase in sulfur oxide and nitrogen oxide emissions from coal-fired power plants and smelters.

The significant rise in the use of pesticides and fertilizers in the past decades has resulted in contaminated food and water sources. Some surveys give useful indications of the dimension of the issue (*Bhuiyan and Castaneda 1994; Tejada 1992, Tejada 1994*). Contamination of food with pesticides can result from direct spraying of the crops and vegetables in the field or treating harvested food crops to prevent insect infestation.

In a study by Tejada in 1994, the amount of pesticide residues present on various vegetables sold in Laguna markets was determined. Result showed that residues of methyl parathion pesticide exceeded the maximum residue limit in cabbage, Chinese pechay and eggplant. However, washing and cooking are effective ways to reduce pesticide residues on food crops as shown in another study by Tejada. Other surveys showed that well water in irrigated areas yielded the pesticides that were in current use and also pesticides not reported as being used. In Nueva Ecija, pesticides that were not reported as being used were found in well water more frequently than those that were reported to be in use

The low level of knowledge and practice regarding pesticide use contributes in the findings that individual exposures are of public health significance, and that pesticide-related health problems are common (*Tejada 1994*). On two pesticide-using areas, nearly all farmers reported symptoms of pesticide poisoning (*Warburton et al 1994*). This resulted from unsafe pesticide use, storage and handling practices.

Few farmers wear full protective clothing when they spray. Spraying against the wind is common. Most storage practices are unsafe, and disposal of empty pesticide bottles often involves selling, or alternatively dumping into the paddy ecosystem. Although the study does not reflect the general picture of farming practices in the country, this may be beneficial in identifying serious concerns in pesticide use.

The addition of hazardous substances to food products to make them look fresh or improve their color or shelf life threaten food quality. There were local reports on the application of formalin on vegetables or dye, commonly known as *iodos*, on fish sold in the markets. Some dealers and vendors allegedly practiced these to increase their profits. The use of chemical additives such as nitrate and nitrite for curing meat products was also reported in 1992, causing food poisoning in some areas in Metro Manila (*Santos et al 1996*).

Food accounted for 48 percent of total family expenses in 1994. The 1998 NHDS showed that 61 percent of total households are buying cooked food regularly. Sources of cooked food outside of the household are mainly *carinderias* (44 percent), restaurants (30 percent) and ambulant vendors (26 percent) and any of the three sources (23 percent).

Air Pollution

Air quality is crucial to the existence of human beings, but it is degraded at such an alarming rate. Air pollution comes from vehicles (mobile sources), industries (stationary sources) and area sources such as road dusts and open burning. Indoor air pollution comes from similar sources but are compounded further by poor ventilation, cooking fuel and cigarette smoking.

Metro Manila faces serious air pollution. Sixty percent of all vehicles in the country are in the city and vehicular emissions contribute 60 percent to air pollution in Metro Manila. These pollutants include particulate matter, oxides of nitrogen, lead, carbon monoxide and sulfur dioxide. Diesel used by passenger utility vehicles (*jeepneys*), buses and trucks is a particular menace with its visible black smoke and emissions of most of the total particulate matter, sulfur and nitrogen oxide. Cars, motorcycles and other utility vehicles are responsible for carbon monoxide and lead in the air. Poorly maintained cars and buses worsen the situation. In 1994, low-lead and unleaded fuel was introduced in the country.

A Land Transportation Office (LTO) report showed that from 1992 to 1996, there had been an average annual increase of 10 percent in the number of registered vehicles, leading to a total of more than two million vehicles nationwide in 1996. About half of these are in Metro Manila.

Industrial operations contribute to air pollution through combustion-derived pollutants like soot, oxides of nitrogen, aerosolized fat from food processing, sulfur dioxides and carbon monoxide. To speak of pollution from industrial sources in Metro

Manila is to speak of industrial pollution in the country. This is because 69 percent or about two-thirds of the country's 15,000 industrial operations are in the metropolis. Industries contributed 8 percent of the total airborne sulfur oxides and 68 percent of nitrogen oxides from all sources (*1990 EMB Emission Inventory*).

Individually, area sources (e.g., construction, aircraft operations, and fuel combustion) would seem to contribute insignificantly to the air pollution problem. In reality, they generate significant amounts of particulate matter (PM). They account for 82 percent of the total PM and 73 percent of the total PM10 emissions in Metro Manila.

The average annual measurements of concentrations of total suspended particulate and sulfur dioxide, from routine air quality monitoring of the DENR in 1988-92 in Metro Manila, showed that the levels of particulate dust could affect human health. Another survey done by the Environmental Management Bureau (EMB) found an increase in the levels of particulate matter (PM10) and total suspended particles (TSP) in the atmosphere. The PM10 levels rose from 250 ug/m3 in 1990 to 322 ug/m3 in 1994, increasing by approximately 28 percent of its 1990 level. The TSP levels from 1990 to 1995 were also beyond the set standards of 90 ug/m3 (*DENR 1997*). Increasingly, the air quality in some parts of Metro Cebu is deteriorating and threatens to expose people to airborne pollutants, particularly PM10 and lead from vehicular emissions, domestic cooking and industrial sources (*Ingle 1993*).

Data are scarce on the impact of air pollution upon the health of the urban population. Only special studies on specific populations are available like an epidemiological study done by the University of the Philippines College of Public Health in 1990 and 1992. The study defined exposures to dust and lead by specific populations in Metro Manila.

Chronic obstructive pulmonary disease (COPD), its signs and symptoms (chronic cough, phlegm, wheeze and shortness of breath) are more than twice as prevalent among jeepney drivers as among commuters and drivers of air-conditioned buses (*Sacida and Torres 1991*). In addition, being a Manila jeepney driver increased the risk of abnormal pulmonary function by approximately 50 percent and the risk of chronic obstructive disease by more than double.

Studies in communities in Isabel, Leyte showed higher rates of cough, phlegm and bronchitis among children in the industrial area than children in the control area (rural), despite the fact that in the control community more fathers smoked and wood is the more frequently used cooking fuel (*Torres and Sacida 1992*). The study also showed that significant risk factors for below normal pulmonary function were the type of cooking fuel, residence in the industrial area and father's smoking. The risk of below normal pulmonary function was more than 16 times higher among children in households with wood as cooking fuel compared with those using kerosene and liquefied petroleum gas.

In terms of lead exposure due to air pollution, data available from municipalities and cities in Metro Manila show a tendency to higher blood lead levels in the inner city areas where traffic flows are greatest (*Sacida and Torres 1994*).

Vector and Vermin

The poor state of the nation's environmental sanitation has also resulted in the increasing incidence and outbreaks of vector-borne and vermin-related diseases like malaria, filariasis, dengue fever, schistosomiasis and leptosporosis. Other community concerns related to insects and vermin are those associated with some form of annoyance and irritation. In a survey of selected urban areas, the households considered mosquitoes, flies and rats as number 1, 2 and 5 leading health hazards, respectively.

Most households (89 percent) complained of rat problems and 97.2 percent complained of flies and mosquitoes *(UHNP Baseline Studies 1995)*. In rural areas, schistosomiasis, a disease brought by snail vectors, is endemic in regions 4, 5, 7, 9, 10, 11 and 12. *(More details of vermin- and vector-related diseases are discussed in other sections of the document.)*

Incidentally, the large burden of disease due to adverse environmental conditions poses questions involving the ability of the private and public sectors to identify environmental health hazards and undertake preventive or abatement steps. This pertains to the level of knowledge and attitudes that influences one's behavior related to health risks from environmental pollution and the responsibilities of different government agencies in supporting preventive and containment efforts through the identification of hazards, promotion of their prevention, monitoring and regulation.

The 1995 Philippine Environmental Health Assessment Study (PEHAS) showed that changes in present practices related to environmental hazards would result in substantial health benefits. However, a review of available information for various environmental exposure pathways reveals little data on knowledge and attitude of the population regarding pollution and its impact on health. In addition, there is no adequate information to assess whether behavior reflects lack of knowledge or the influence of socioeconomic factors, such as general education and income levels, in preventing pollution or reducing its impact on health. Meanwhile, at least 10 other national government departments are responsible for the prevention and amelioration of environmental health risks.

This diversity of focus and numbers reflects strengths and specialization by different agencies, as well as constraints in having a cohesive program of prevention and abatement of pollution with a focus on human health. While the role of the DOH is apparent in ensuring a focus on health, there is also a continuing need and importance of interagency collaboration to bring together the diverse interests of different government agencies.

Goal: Environmental health conditions in the country are improved.

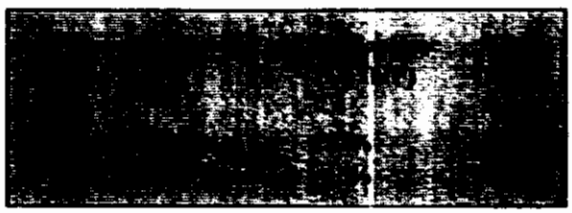
National Objectives for Health by 2004

Health Status Objectives

1. Reduce morbidity, mortality and disability resulting from poor environmental conditions.
   (*Note: Health status objectives specific for each disease resulting from certain environmental factors are discussed in corresponding sections (e.g. diarrhea, soil-transmitted helminthiases, asthma and COPD, food poisoning, CVD, cancer, malaria, schistosomiasis, dengue and others*).

Risk Reduction Objectives

1. Increase the percentage of households practicing boiling of water from doubtful sources to 50 percent.
   (Baseline: 10 percent of households boil water from doubtful sources in 1993, NHS)
2. Increase the proportion of population using sanitary toilet.
   (Baseline data is established in 2000).
3. Reduce the average amount of municipal solid waste produced per capita per day to less than 510 grams.
   (Baseline: 530 grams/capita/day in 1997 at 2.2 percent increase a year, JICA study in Metro Manila)
4. Increase the proportion of motor vehicles using unleaded fuel to 50 percent.
   (Baseline data is established in 2000)
5. Increase the percentage of industries complying with air quality emissions standards to 70 percent.
   (Baseline: 26 percent of industries comply to air quality emissions standards in 1995, EMB)
6. Reduce the percentage of households using wood and charcoal when cooking.
   (Baseline is established in 2000)
7. Increase the percentage of households practicing insect and vermin abatement measures.



Services and Protection Objectives

1. Increase the percentage of households with access to safe water to 91 percent.
   (Baseline: 87 percent in 1998, NDHS)
2. Increase the percentage of households with sanitary toilet facilities to 85 percent.
   (Baseline: 81 percent in 1998, NDHS)
3. Increase the proportion of population with sewer connection to 10 percent.
   (Baseline: 7 percent in 1998, MWSS)
4. Establish programs on waste minimization (recover, recycle and re-use) in at least 50 percent of municipalities and cities.
   (Baseline data is established in 2000)
5. Increase the number of hospitals disposing infectious and hazardous waste according to approved means to 60 percent.
   (Baseline: 51 percent in 1997, DOH survey in Metro Manila hospitals)
6. Ensure that all food establishments comply with minimum sanitation standards.
   (Baseline data is established in 2000)

7. Institutionalize the use of educational materials on environmental sanitation concepts as an integral part of the elementary school curriculum in all public schools.

   (Baseline: 1,000 public schools were provided with the materials in 1997 EHS)

8. Establish a focal point and institutional capacity for environmental health risk assessment and communication at central and 16 regional offices.

OCCUPATIONAL HEALTH

Workforce

The WHO estimated that by year 2000, the global labor force would grow to three billion, with over 80 percent coming from developing countries. Two-thirds of the world's population spend eight hours or one-third of their lives earning a living. In developing countries, the home can serve as workplace for industrial activities, from craft production to electronics assembly. Family members of workers and contractors, including children, pregnant women and elderly people share the work in small farms, home-based or cottage industries and small-scale enterprises. Of growing concern is the increasing entry of women in the workforce who are exposed to reproductive health risks at work during pregnancy and lactation.

Occupational illness is often associated with industrialization, heavy machinery and huge factories. Commonly underestimated is the greater risk from agriculture and small industries in developing countries that employ more workers. Small-scale industries and services often have fewer resources, with heavy workloads and multiple tasks for one worker that translate to higher risk.

In the Philippines, 50-60 percent of the total population constitutes the formal workforce. If informal work and work at home are to be considered, then a greater majority of the population is involved in work.

The national economy and the working population have grown tremendously in the last decade. The total labor force has reached the 32 million mark in 1998 or 68.6 percent labor force participation (LFP). Of this, 27.8 million are gainfully employed or 86.7 percent employment rate (ER). Sixty percent of workers are male.

Fifty-five per cent of total workers are employed in the rural areas where more males work. Female workers predominate in the urban areas. The regional distribution of workers varies. Majority or 55 percent are in Luzon. Southern Tagalog contributes 25 percent of workers followed by the NCR with 24 percent and Central Luzon with 17 percent. Twenty-four per cent are in Mindanao, and 29 percent and 18 percent of them are in Southern Mindanao and Central

Mindanao, respectively. Twenty-one per cent is in the Visayas, mainly Western Visayas (40 percent) and Central Visayas (35 percent).

Filipino workers are young. Those 35-44 years old comprise 43 percent of the workforce and those 34 years old and below comprise 44 percent. Thirty-nine percent and 34 percent of the workers have reached the elementary and high school level, respectively. More than half of the workers has graduated both from elementary and high school. Twenty-three percent reached college level. However, most are undergraduates.

Workplace

New technologies, new chemical substances and materials, growing mechanization and industrialization in developing countries brought about new work developments, work environment and work organization. There is movement of hazardous industries to recipient nations that do not have previous experience and information on their potential health impact. The lack of necessary health and environmental safeguards and the unsustainable consumption of natural resources characterize this movement. The danger in this development is that decisions on standards are not necessarily health-based but dictated more by economic and political considerations.

There are harmful conditions and hazardous physical, chemical and biological agents in the workplace that cause occupational and work-related diseases and injuries. They also account for loss work-time and reduced efficiency in the workplace.

Physical agents such as noise, extremes of temperatures, vibration, shock, humidity, electromagnetic radiation, abnormal pressure affect more than 40 percent of industrialized countries and 80 percent of developing countries. Noise-induced hearing loss (NHL) is the prevailing illness caused by physical agents in both industrialized and developing countries.

About two million different chemicals are used in industries. The number is growing with around 100,000 chemicals being synthesized every year. Only 1.5-3 percent of these chemicals has been tested for carcinogenicity. It is estimated that 5-10 percent is carcinogenic to man.

There are some 200 biological agents (bacteria, fungi and parasites) and about 3,000 allergenic factors present in the workplace. Fifteen percent of workers in industrialized countries are at risk and probably more in developing countries especially in agricultural areas.

Ergonomics is the interaction between man and his total working environment including hazardous agents, tools and equipment that may induce awkward position, improper lifting, repetitive movement and heavy physical workload. Health related problems due to ergonomics include damage to the cardio-respiratory and musculo-skeletal systems and traumatic injuries. Musculo-skeletal disorder is the main cause of both short-term and permanent disability.

Psychological stress (work overload and competition) is increasing and affects approximately 30-50 percent of workers in industrialized countries. The effects are ill-health and loss of working capacity, sleep disturbances and depression, flame-out and burn-out syndrome. Often times, all of these are

manifested in increasing cardiac diseases and hypertension.

The country's workplace is one of its greatest assets, and is expected to provide the necessary manpower to push the country towards socioeconomic productivity and development. In this regard, the work environment should be improved to maintain a healthy workforce.

Data from the Bureau of Working Conditions showed that 35 percent of identified hazardous agents or risk factors were due to ergonomic conditions. Ergonomic problems result from prolonged standing (43 percent), excessive physical work (19 percent), unfavorable work position (11 percent) and static monotonous work (8 percent).

Thirty-four percent of hazards were due to chemical exposure to dust (30 percent), liquid (29 percent), mists (21 percent), and gas (14 percent). Exposure to physical hazards accounted for 25 percent. Physical hazards were due to noise (55 percent), temperature (29 percent), pressure (4 percent) radiation (4 percent), illumination (1 percent), and others (7 percent). Only 6 percent were due to biological agents such as virus (25 percent), bacteria (24 percent), fungus (21 percent) and parasite (18 percent).

Manufacturing is the most exposed industry to all types of hazards in the workplace. Agriculture is most exposed to biological hazards.

Occupational Diseases

Different advances in technology and rapid industrialization and urbanization inevitably lead to the risk of occupational diseases and work-related illnesses and injuries. Recent occupational health data showed that 40-50 percent of the world's population is exposed to hazardous conditions in the workplace.

Even in the absence of disease, human life is frequently put at risk, whether by accident or design or living with risks and associated ill-health. WHO estimated that there would be 217 million cases of occupational diseases, 30 to 40 percent may lead to chronic diseases and 10 percent to permanent work disability. There are 120 million cases of occupational accidents and injuries with estimated 200,000 expected fatalities each year.

Worldwide, the ten major work-related illnesses are:

- respiratory diseases
- musculo-skeletal disorders
- cancers
- injuries
- cardiovascular diseases
- reproductive disorders
- neurotoxic disorders
- noise-induced hearing loss
- dermatological disorders
- psychological disorders

There is little data regarding occupational diseases in the country. Based on the resolved cases on employees' compensation appealed at the Employees Compensation Commission (ECC), there were 305 cases of deaths approved as work-related. The leading causes of deaths were malignancy (15 percent); liver diseases and diseases of the digestive system, heart diseases and diseases of the circulatory system, and gunshot wound (10 percent each); hypertension and stroke (7 percent); pulmonary tuberculosis (6 percent); other infectious diseases

(5 percent) and ulcers and mental disorders (4 percent each).

There were 418 ECC-approved cases of disabilities from work-related incidents. The leading causes of morbidity and disabilities were infectious diseases (10 percent); hypertension and stroke (9 percent); heart diseases and diseases of the circulatory system (9 percent); pulmonary diseases (8 percent); EENT disorders (6 percent); malignancy, diseases of the genito-urinary tract, and diseases of the musculoskeletal system (5 percent each); and liver diseases and diseases of the digestive system (4 percent).

One concern being addressed by the DOH is occupational poisoning. There were 459 (10 percent) deaths out of 4,578 poisoning cases reported from the 16 RHOs from 1988 to 1990. Out of these poisoning cases, 1,855 (40 percent) cases were attributed to pesticides.

There were 475 patients examined because of exposure to heavy metals or chemicals at the workplace. Of these, 36 patients (7 percent) were detoxified at UP-National Poison Control and Information Service (UP-NPCIS) in 1995-96. In 1997, there were 541 workers and community residents examined due to elevated levels of chemicals (mercury, cyanide, arsenic, cadmium and copper) and 39 patients (7 percent) were detoxified.

The problem with majority of occupational disease is the limited data on its distribution, prevalence and severity. The problem exists on a national scale. Routine government health surveillance data are unlikely to be sufficiently accurate or sensitive or to have the coverage needed to show changes in health risks associated with a specific industry. Even when such statistics are collected, gross underreporting is the rule rather than the exception. Occupational illness is neglected in the training of health staff. The subject is looked upon as a separate discipline, isolated from the mainstream of public health and health science. The result is lack of properly trained human resources in occupational health. Thus, occupational diseases go unrecognized and undiagnosed and are considered silent epidemics.

Occupational Health Services and Facilities

Many countries have neither the resources nor the institutional structure to deal with the control of occupational conditions brought by new technologies and urbanization. Only 5-10 percent in developing countries and 20-25 percent in industrialized nations has access to adequate occupational health services.

In the Philippines, the government has the mandate to legislate, regulate and enforce the Occupational Safety and Health Standards. However, there are only 235 labor inspectorates responsible for enforcing compliance to labor standards of about 380,000-400,000 establishments nationwide. Of this group, only 60 have the technical skills to conduct safety and health inspections. They are also limited by jurisdiction. They do not cover workplaces in land, sea and air transportation, the enforcement being lodged with other government agencies. Sadly, coordination among enforcement agencies also leaves much to be desired.

The National Occupational Health Survey Phase I and II, funded by the DOH from 1988 to 1993, obtained data on in-plant health services and facilities for workers in 3,437 establishments surveyed.

Health services and facilities are available in less than 22 percent of the establishments as part of the health care program. Commonly provided were pre-employment screening, consultations, and treatment of medical or surgical emergencies. Health services were less commonly available to workers in small-scale industries.

As to health facilities, 418 (8 percent) of the firms have a plant clinic, 0.9 percent with infirmary facilities and 2.3 percent with hospital services. Slightly over a third or 37 percent of the establishments provide first aid kits to workers and 21 percent provide medical supplies to workers. On the whole, only 7 percent of the small-scale firms, 60 percent of the medium-scale and most large companies keep files, accomplish accident reports or maintain dispensary records.

Ninety-four percent of large establishments and 72 percent of the medium-scale industries have company physicians. A small fraction (4 percent) of the establishments has safety officers or first aiders in their companies.

In general, findings showed that there were hazards but less control measures were found in the workplace, inadequate health services and higher percentage of accidents, especially in the small-scale industries. Only a small percentage of the surveyed establishments complied with the occupational health and safety standards.

Violations of occupational safety and health standards included non-registration of establishment (13 percent), no accident report (12 percent), no safety committee and annual medical report (9 percent), inadequate first aid kits (5 percent) and no personal protection equipment (0.3 percent).

Health experts are predicting a worldwide epidemiological shift towards lifestyle-related diseases and occupational and environmental health concerns will contribute to concurrent public health issues and problems. In response to this epidemiological shift, the DOH has applied a standard package of support services specific to four different venues such as the community-based program, hospital-based program, school-based program and program for the workplace.

The program aims to motivate the industrial and business establishments to provide prevention and control services on lifestyle-related diseases to their employees. This will be done in coordination with the Department of Labor and Employment (DOLE). The minimum package of services shall be health education, exercise and sports program, stress management, risk assessment and referral.

This DOH initiative will address the emergence of factors detrimental to health such as a stressful and demanding workplace and the negative side of industrialization, growing mechanization and urbanization.

Goal: Occupational health conditions in the country are improved.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the morbidity, mortality and disability resulting from adverse occupational conditions.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Increase the participation of workers and management in healthy lifestyle, personal skills and work style programs.
   (Baseline data is established in 2000)
2. Increase the use of appropriate personal protection equipment (PPE) at the work site.
   (Baseline data is established in 2000)
3. Increase the awareness on health and safety in the workplace.
   (Baseline data is established in 2000)
4. Increase the use of safe and environment-friendly technology.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the number of personnel at the local level who are technically capable in the recognition, diagnosis, evaluation, control and management of occupational hazards, diseases and other related concerns.
   (Baseline data is established in 2000)
2. Increase the percentage of establishments providing health facilities and services to workers to 30 percent.
   (Baseline: 22 percent in 1993, National Occupational Health Survey)
3. Formulate policies, plans and programs, standards and guidelines on occupational health and other related concerns.
   (Baseline data is established in 2000)
4. Establish and strengthen the health information system for occupational health activities.
   (Baseline data is established in 2000)
5. Institutionalize occupational health programs and services at the regional and local levels.
   (Baseline data is established in 2000)
6. Develop operational system or mechanisms in the integration of workers health component in the health care delivery system at the local level.
   (Baseline data is established in 2000)
7. Enforce rules and regulations related to industrial hygiene.
   (Baseline is established in 2000)
8. Upgrade existing facilities or laboratories to respond to occupational health and related concerns at local level.
   (Baseline data is established in 2000)
9. Ensure that rehabilitation and return-to-work programs are in place to support workforce to return to work after illness or injury.
   (Baseline is established in 2000)

HEALTH RELATED BEHAVIORS AND PRACTICES

Personal habits, behavior and attitudes are private matters with public consequences. They also present potentials to restrain health development. Lifestyles are responsible for a large share of diseases and disability that drain resources that could otherwise go to better development pursuits.

Attitudes and practices of the individual, families, communities, business and industry wield significant influence on the health status of the population. Careless waste disposals of individuals multiplied in million households all over the country is a scenario repeated daily and can only result in dire health consequences and adverse environmental condition. Cigarette smoking which is a private indulgence, affect not only the lungs of the smoker but much more the innocent people within the radius of its deadly smoke. Excessive food intake, especially of the wrong kind, results in obesity and chronic diseases associated with it. All taxpayers, including the healthy, pay for such unnecessary consequence of a personal indulgence.

Requirements to protect workers and the public from potentially harmful industries and manufacturing processes are considered financial burden and can lead to vigorous oppositions to efforts to promote health, prevent work-related diseases, injuries and disabilities. Reckless disregard for safety measures in homes, schools, workplaces and even in the confines of ones vehicle results in injuries, disabilities and death. The lack of knowledge on the other hand of preventive measures and consequences of certain health related practices results in wrong choices and decisions that ultimately affect a person's health and general well-being.

These obstacles are too apparent to miss and present challenge to health development, but they also provide the perfect opportunities to facilitate better health. Programs and services in disease prevention, health promotion and protection can be effectively anchored on social and behavioral factors to ensure positive results and critical impact.

Behaviors, attitudes and habits are acquired characteristics and by their very nature could be changed or eliminated through information and strong motivation.

Personal choices and decisions are influenced by knowledge or lack of it, and the awareness of the consequences of such actions. For example, food choices are determined by the nutritional knowledge of the person who buys and prepares them. Other factors include personal and family preferences and the influence of advertising practices. These factors could be addressed by initiatives that promote

good food consumption habits. Parents on the other hand can enhance (over generations) opportunities for their children's health by fostering healthy habits such as proper diet and nutrition, personal hygiene and sanitation, encouraging the development of effective maternal and child health programs by actively participating in their implementation, supporting school health activities and initiating and enjoying recreational activities with children. These are simple and practical health-seeking behaviors that should be promoted and initiated early in life.

Maintenance or improvement of the physical fitness of adults and the elderly effectively prevents risk to fatal degenerative diseases, ensures productive life and increases longevity. Regular physical exercise contribute to this state of well-being and need not be rigorous and intense. Physical exercise should be an enjoyable and entertaining regular pursuit and could take the form of dancing, brisk walking, light sports that allow the movement of body parts or play with younger members of family, tending ornamental plants or vegetable plots and other household chores. Children should be encouraged to take up outdoor games, sports that promote physical development and foster sportsmanship and camaraderie for their own physical well-being. Providing safe recreational environment and activities for young people prevent drug and substance-induced pleasures.

Families and communities can influence factors that contribute to risk-taking and abusive behaviors that lead to violence and accidents. Families should provide the first safe haven and nurturing environment for the young to prevent them from seeking outside "care," wrong values and negative influence. A confused young person without the strong anchor of family and well meaning friends may seek wrong companies, express negative emotions through abusive behaviors, or be unnecessarily exposed to life of crime and violence. It is important that families and communities are tapped for advocacy and information campaigns and community projects that will reduce negative behaviors and practices that impact on health.

People will continue to decide what food to eat and amount to consume, whether or not to smoke or indulge in that "one" drink of alcohol, to walk the two blocks or take an expensive ride. The young will be seeking new experiences, for some, including exploring the highs brought by drugs or alcohol. Advertising tempts the young to taste that first cigarette smoke that usually ends as a habit. These are windows of opportunities for educating and enhancing people's knowledge and making them aware of the consequences of their decisions since each of these decisions will influence the length of people's lives and their capacity to enjoy it.

PHYSICAL ACTIVITY AND FITNESS

Regular physical activity was recognized as early as the fifth century BC as necessary for healthy living. Since the early centuries, scientists, physicians, philosophers and educators have promoted the idea that being physically active contributes to better health, improves physical functioning and increases longevity.

Physical activity is any body movement produced by muscular contraction that leads to a substantial increase in a person's energy expenditure (*Shephard 1994*). Individuals participate in various types of activities: household chores, physical education programs, work-related activities and leisure activities such as exercise, sports, dance, physical training and play. One is able to achieve a certain level of physical fitness depending on the type, purpose, intensity, frequency and duration of activity.

Physical fitness is the ability to carry out daily tasks with vigor and alertness and without undue fatigue, with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies. Thus, any improvement in an individual's fitness improves his or her health and well-being.

Cardiovascular diseases (CVD) have been identified as the leading cause of death in the last decade of the twentieth century. One of the factors in the increase of CVD in the Philippines is sedentary lifestyle. A 1985 study on recreational activities in Manila (*Uy 1985*) showed that the number one activity was watching television. Active pursuits were not part of the top ten activities Manila residents have chosen. A national survey on Filipino women (*Uy 1987*) further revealed that proximity to one's home environment dictated the sedentary type of activities women participated in. Various physical fitness tests among Filipino school children revealed poor to fair level of cardiovascular fitness (*DECS 1994*). In general, 50 percent or half of Filipinos engage in sedentary to light physical activity. This doubles the risk for coronary artery disease and other chronic degenerative diseases (*DOH 1994*).

Physical activity should be a habit that need not be strenuous. In fact, routine exercise can actually reduce stress. People who have daily light to moderate exercise can attain substantial health gains. In spite of the potential benefits of exercise, only a handful of Filipinos engage in light to moderate physical activity at least 30 minutes a day three times a week.

Alarmed by the rising CVD cases and recognizing the importance of physical activity in the prevention of lifestyle-related diseases (i.e., cardiovascular diseases, cancer, diabetes, among others), the DOH launched in 1994 the *Hataw Bayan Hataw* (The Great Filipino Workout), a fitness awareness program designed by and for Filipinos. The program promotes physical activity in all forms through a series of scientific exercise routines for mass-based physical fitness. It aims to reduce lifestyle-related diseases like hypertension, stroke, heart diseases, osteoporosis, asthma, depression, back pain and other disabilities through free and enjoyable physical exercise.

Studies were conducted on the effects of the program's exercise routines on the cardiovascular fitness of participants. The findings showed that exercise pulse rates and recovery pulse rates significantly decreased after two to three times of exercise covering a six to eight week period of intervention (*DOH 1997*). Another related study showed a decrease in blood sugar level, weight, waist-hip ratio and resting pulse rates among diabetic patients (*Dagum 1998*). These studies showed that a program like *Hataw Bayan Hataw* increases awareness and participation in physical activities.

The DOH is actively pursuing the promotion of *Hataw Bayan Hataw* as a community-based physical fitness activity and in the sports programs of LGUs and as part of the school-based sports programs of the DECS. Training of fitness leaders and the introduction of physical activities that are more affordable and accessible to the masses should also be supported.

Participation in active leisure pursuits freely chosen by the individual, is promoted not only to improve cardiovascular fitness (through aerobic exercise) but other health-related components (muscular strength and endurance, flexibility and body composition). This is based on the fact that there are intervening variables (personal attributes, socioeconomic status, personality types and environment) affecting physical activity, fitness and health (*Shephard 1994*). Participation in physical activities has been proven to play a role in the prevention of cancer.

For better health, experts agree that physical activity should be performed regularly. It is recommended to people of all ages to include a minimum of 30 minutes of physical activity of moderate intensity, such as brisk walking, at least three times a week. Everyone, including the young may derive physiological benefits from physical fitness activities. The gains from regular physical activity contribute to better quality of life until retirement and should be pursued with proper motivation. There is a need to strengthen such endeavors by modifying attitudes and behavior towards participation in physical activity for fitness and health.

Goal: Regular participation of Filipinos in different forms of physical activities for fitness and health is promoted.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the prevalence of diseases related to sedentary lifestyle.
   (Note: Health status objectives specific for each disease resulting from sedentary lifestyle are discussed in corresponding sections e.g., CVD, cancer, osteoporosis, asthma, disabilities.)

Risk Reduction Objectives

1. Improve the fitness level of the population in all health-related components (cardiovascular endurance, flexibility, muscular strength and endurance) to 75 percent.
   (Baseline data is established in 2000)
2. Increase the proportion of six years old and above engaging in light to moderate physical activity for at least 30 minutes per day three times a week to 60 percent.
   (Baseline: 29 percent in 1998, NDHS)
3. Increase the intensity of physical activity of six years old and above to at least 70 percent of age-predicted maximal heart rate
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the number of LGU's implementing the *Halaw Bayan Halaw* program
   (Baseline data is established in 2000)
2. Increase the number of trained and certified fitness and recreation leaders implementing the *Halaw Bayan Halaw* program.
   (Baseline data is established in 2000)
3. Institutionalize regular physical fitness testing for the population.

PERSONAL HYGIENE

Personal hygiene is the practice of maintaining cleanliness of the body. It is done through bathing, hair grooming, hand washing, brushing teeth, trimming nails and cleaning ears, among others. Through these personal behaviors, social acceptance is gained. However, maintaining good or acceptable personal hygiene is seldom perceived and acknowledged as protection against diseases as shown by the results of local surveys.

The DOH surveys on soil-transmitted helminthiasis showed a prevalence of 50 percent in the 24-schistosomiasis endemic areas (1997), 57 percent in NCR, Cebu, Cagayan De Oro (1995) and 64 percent in Aurora province (1998, cumulative). In the 1999 survey of a barangay conducted by DOH-CDCS, only 71 percent of the 300 school children acknowledged that not washing the hands after using the toilet causes transmission of the worms. The health consultations done during the 1998 DOH *Kuto Kutis* Campaign showed that 33 percent of the clients examined were suffering from fungal skin infection and 35 percent from scabies. Dental examination showed that 92.4 percent of those examined have dental caries and 76.3 percent have periodontal or gum diseases. Non-washing of hands before feeding and after cleaning the child (after defecation) was cited in a 1994 study as among the behaviors of mothers surveyed that predisposed their 0-5 year old children to diarrheal diseases. *Tayo [illegible]*

Diseases related to personal hygiene remain high. Diarrheal diseases have been the number one cause of morbidity attributed to poor personal hygiene. Skin diseases and worm infestations are the next most commonly associated with poor personal hygiene. Dental diseases and complications of other diseases like leprosy and elephantiasis can be prevented through proper personal hygiene. Worm infestation contributes to malnutrition and anemia among children leading to high child mortality rates.

Poor health resulted from the low awareness of the health benefits of personal hygiene. A study on the "Knowledge, Attitude and Practices of Schoolchildren on Environmental Health and Sanitation" conducted by the DOH and DECS in 1996 showed that few of the school children recognized that poor personal hygiene could cause illness. The 1996 DOH-DECS study indicated that only 71.4 percent of school children washed their hands after using the toilet and only 75.9 percent washed their hands before eating. The same study showed that 66.3 percent of school children bit nails, sucked thumb and placed objects into their mouth. Only 39.5 percent regularly

trimmed their fingernails and toenails. The study also showed that only 65.2 percent of school children took daily bath; 31.7 percent borrowed personal things like combs, toothbrushes, towels and clothes; and only 63.8 percent wore slippers and shoes most of the time.

UNICEF pursued this finding in another study conducted in 1998 among school children. Results showed that hand washing with soap was 33.2 percent for Luzon, 35.6 percent for the Visayas, and 44.4 percent for Mindanao. The UNICEF study however did not specify whether hand washing was done before eating or after using the toilet. Another study showed that tooth brushing habits dropped from 86 percent in 1987 to 83 percent in 1992 (all ages).

The above studies showed the gaps between knowledge and practices on personal hygiene. It is necessary to promote and intensify early education on personal hygiene in the home and in school as part of health advocacy among school children. Equally strong advocacy to set up structures for personal hygiene in the workplaces, health facilities, recreational areas and other public areas should be pursued.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the incidence or prevalence of diseases related to poor personal hygiene

Risk Reduction Objectives

1. Increase the proportion of school children practicing proper personal hygiene.

Personal Hygienic Practices	Baseline (DOH-DEGS 1996)	2004 Targets
1. Wearing slippers or shoes	[illegible]	[illegible]
2. Brushing of [illegible] teeth	[illegible]	[illegible]
3. Washing of [illegible]	[illegible]	[illegible]
4. Taking daily [illegible]	[illegible]	[illegible]
5. Using toilet [illegible]	[illegible]	90%
6. Washing the [illegible] soap and water after [illegible]	[illegible]	[illegible]
7. Washing of [illegible]	[illegible]	[illegible]
8. Not borrowing personal [illegible]	[illegible]	[illegible]
9. Washing fruits before [illegible] them	[illegible]	[illegible]
10. Not buying cooked food from doubtful sources (i.e., ambulant [illegible])	[illegible]	[illegible]
11. Trimming nails regularly	[illegible]	[illegible]

4. Increase the percentage of households with access to safe water supplies to 91 percent.
(Baseline: 87 percent in 1998, NDHS)

Services and Protection Objectives

1. Increase the number of schools providing hand washing facilities, safe water supply, and sanitary toilet facilities.
(Baseline data is established in 2000)
2. Increase the number of schools and workplaces providing regular dental screening and treatment.
(Baseline data is established in 2000)
3. Increase the number of schools with lessons on personal hygiene and environmental sanitation incorporated in the school curriculum.
(Baseline data is established in 2000)
5. Increase the percentage of households with access to sanitary toilet facilities to 85 percent.
(Baseline: 81 percent in 1998, NDHS)
6. Increase the number of cities and municipalities conducting health campaigns on personal hygiene and environmental sanitation.
(Baseline data is established in 2000)
7. Increase the number of public establishments providing hand washing facilities, safe water supply, and sanitary toilet facilities.
(Baseline data is established in 2000)

VIOLENCE AND ABUSIVE BEHAVIOR

Violence is a deliberate act or abusive behavior to hurt another person or oneself. A person who is known to the victim most often commits the violent act. There are many forms of violent acts. Suicide is violence directed to oneself. Interfamilial violence is where the victims and perpetrator are related to each other by blood and affinity. Domestic violence includes not only family members but persons not related by blood and affinity who lives in the same domicile. Homicide is violence where the victims or perpetrators are non-members of the family and who could either be familiar or strangers to each other.

Violent acts and abusive behaviors cover the range of violent crimes like murder, rape, robbery, assault and homicide. Though adults are generally the common targets of violent acts, the young and the elderly are not spared. Child abuse and abuse of the elderly is not uncommon.

Gender assault is a specific form of violence committed against a person because of the person's being male or female. Since females are more often the victims, the term is often interchangeably used to describe violence against women. Violent acts and abuses against women are best described in Article 2 of the UN Declaration on the Elimination of All Forms of Discrimination Against Women. This article defines that violent acts against women encompasses and is not limited to, physical, sexual and psychological violence. Violence occurring in the family includes battering, sexual abuse, marital rape, female genital mutilation and other traditional practices harmful to women, non-spousal violence and violence related to exploitation. Violence within the general community includes rape, sexual abuse, sexual harassment and intimidation at work, in educational institutions and elsewhere, trafficking in women and forced prostitution; and violence perpetrated or condoned by the State.

There are many explanations for the causes of violent behaviors. Direct provocation, frustration leading to aggressive behavior, overcrowding, noise, pollution and situations which heighten physiological arousal like watching provocative films enhancing overt aggression or sexual arousal, drugs and alcohol intake have all been connected with violence.

Many models attempt to explain the pervasiveness of violence against women. Many of these models look at the individual, family and the interpersonal models. However, many of them fail to hit the core of the problem, that is, the cultural and structural

factors that legitimize the exercise of violence both in the domestic and public spheres. Some feminist sociologists and anthropologists find the concept of patriarchy as a very attractive explanation. Male violence upon women comes from the exercise of male power and male desire to maintain such power. It gives men's work more value, more significance and more pay.

There are few local data on violence and abusive behavior. In 1989, the Philippine College of Surgeon Trauma Registry reported that out of 4,602 cases, mauling (19.2 percent), stab wound (14.6 percent) and gunshot wound (4.8 percent) accounted for 38.6 percent of the total. The 1998 National Trauma Registry (PCS-DOH) showed that 485 (66.3 percent) out of 732 cases were classified as intentionally inflicted.

An analysis of 1,000 documented cases of family and domestic violence from government and non-government files from 1994 to the first quarter of 1996 revealed that physical assault of women and children (the common victims in the study) occurred most frequently (36.9 percent), followed by sexual abuse (26.7 percent) and economic abuse (17.3 percent). These abuses occurred in combinations. Physical assault was often accompanied by verbal and economic abuse (*Guerrero, Sobritchea et al. 1996*).

Victims experienced violence repeatedly at varying periods of time in the hands of the same or different household members (like male spouse or father (the most frequent abuser), the mother, the siblings, the in-laws or the employer (in case of domestic helpers). In this analysis, almost all the victims (98.8 percent) are women. The average age of the victims is 23 years. Three out of ten are young adult females (18-24 years old) while a slightly higher number (43 percent) are adults (25-49 years old). The youngest victim is an infant less than two years old. Most victims are educated, with almost half reaching high school, one-third reaching elementary school, and 13.6 percent reaching college. Despite this, more than half are not gainfully employed while the rest are employed in low-paying jobs such as domestic helpers.

The most common perpetrators of assaults on women are their male spouses or partners, who account for more than half of the abuses. The average age of the perpetrators is 35 years. The perpetrator is usually 12 years older than his victim. Generally, he is a bit more educated than his victim and only five percent have not gone to school. Almost eight out of 10 are employed, although working in low paying jobs as manual laborers (15.9 percent), farmers or fishermen (15.5 percent), drivers (14.9 percent) and service workers (6.5 percent).

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the incidence of injuries, accidents and trauma from violent acts and abusive behaviors (suicide, homicide, rape, sexual abuse, spouse abuse, child abuse, elderly abuse, among others).
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Reduce the psychosocial, environmental and other factors that contribute to violent acts and abusive behaviors.
   (Baseline data is established in 2000)
2. Increase the level of awareness of the population on violence and abuse, including the risks associated, prevention and control and their consequences.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Develop programs for the prevention and control of violent acts and abusive behaviors.
2. Develop health and other support services for victims of violence and abuse.
3. Develop and advocate for inclusion in the school curriculum of teaching materials for nonviolent conflict resolution skills as part of health education.

SUBSTANCE ABUSE

Substance abuse implies functional impairment. It is present when the social and economic functions of the user are compromised. Its use leads to severe and potentially irreversible medical consequences. People are coerced into use for purposes of exploitation. The level of use threatens to undermine social institutions. Stopping its use causes drastic physical and psychological withdrawal syndromes and other morbidity. The users seek the drug even when they acknowledge its harmful effects.

In public health context, substance abuse prevention should focus on all psychoactive substances (illicit drugs, alcohol, tobacco, pharmaceutical drugs and inhalants) regardless of their legal status. Hence, reduction in health and social problems due to use of some substances will not be offset by an increase in problems due to the use of others. Abuse of psychoactive substances and its related problems are among the country's increasing public health and social concerns. Problems associated with its use cover a broad spectrum that includes significant health consequences, social and family disruption and economic issues.

Of the 1,172 cases of poisoning seen in DOH hospitals from January to September 1998, 25 percent (293) are substance abuse-related with 92 percent coming from the NCR. Statistics have shown that in 1996, there were 1,033 cases of poisoning seen at the Philippine General Hospital, 52 percent were substance abuse related.

Drug Abuse

Drug abuse is not a readily identifiable problem. Abusers do not come out to be identified. Hence, the difficulty in acquiring and setting baseline data on the magnitude of the drug abuse problem in the country. The Dangerous Drugs Board (DDB) relies on data based on reported cases, that is, those who seek help and treatment in DDB accredited residential and out-patient facilities.

In 1998 there were 40 active treatment and rehabilitation centers, 32 were residential while eight were outpatient treatment centers. These centers reported a total of 4,983 cases. Residential confinees accounted for 4,444 (89.18 percent) and 539 (10.82 percent) were outpatient referrals. Among the reported cases, 4,267 (85.63 percent) were new cases while 716 (14.37 percent) were re-admitted clients. A significant 11.53 percent increase was recorded among relapse cases. As to the area of residence, the NCR topped the list with 58.31 percent, followed by Region 4 with 22.31 percent, and Regions 3, 7, and 10 with 5.37 percent, 4.57 percent, and 2.55 percent respectively.

Table 20. Cases of Drug Abuse Reported to Dangerous Drugs Board, 1994-1998

Year	Number of New Cases	Percent Change	Number of Readmission	Percent Change	Total	Percent Change	Percent New Case	Percent Readmission
1998	4,267	-6.28%	716	11.53%	4,983	-4.08%	[illegible]	14.37%
1997	4,553	1.72%	642	[illegible]	5,195	[illegible]	[illegible]	12.36%
1996	4,476	44.06%	602	[illegible]	5,078	[illegible]	[illegible]	[illegible]
1995	3,107	19.00%	442	[illegible]	3,549	[illegible]	[illegible]	[illegible]
1994	2,611		366	[illegible]	2,977		[illegible]	[illegible]

Source: 1998 Annual Report, Dangerous Drugs Board

The 3,692 clients evaluated by the Central Screening and Referral Unit is 16 percent higher than last year's 3,182. Of this number, 1,785 clients were voluntarily submitted by their parents or relatives, 36 were apprehended and 142 have undergone drug dependency examinations for employment purposes. The cases examined were broken down as follows:

- Drug dependents 2,390
- Experimenters and occasional users 183
- Drug dependents with psychosis 82
- Drug dependents and alcoholics 9
- Alcoholics 33
- Alcoholics with psychosis 4
- With psychosis but not drug dependents 226
- Not drug dependents 762
- With behavioral disorders 3

Total 3,692

Shabu emerged as the number one drug of abuse in 1994 and has consistently ranked first among the most abused drugs. The prevalence of its abuse has not changed over the years and its popularity continues to rise. Its percentage of abuse over marijuana recorded a significant difference of 56.9 percent. The rise in *shabu* abuse may be attributed to the drug trade being a big business and to the continued proliferation of clandestine laboratories. The most commonly abused drugs in the Philippines are *shabu*, marijuana, corex-D, rob tussin-AC, rugby, trazepam and novaine.

Alcohol Abuse

Drinking and sharing alcoholic beverages is a socially accepted practice in most countries and culture. In the Philippines, there is a great pressure on men to drink alcohol during social occasions. There is nothing wrong with occasional social drinking, unless alcohol is medically contraindicated and prohibited by the physician, or the person is going to drive a motor vehicle, or the person cannot "hold his drink."

In large and sometimes even moderate amount, alcohol is definitely harmful to the cardiovascular system and has toxic effects on the brain and the liver. Several maladies are attributed to alcohol consumption. It is known to cause increase in food intake that may lead to obesity. When taken in large amounts, alcohol alters blood lipids and increases levels of cholesterol and triglyceride two- to threefolds. For persons with controlled or lowered hyperlipidemia through exercise and reduction of fatty food intake, alcohol may drastically increase plasma lipid. In susceptible individuals, it depresses cardiac function immediately after ingestion. Alcohol intake may precipitate premature arterial contractions

and premature ventricular contractions in previously normal persons, reduce cardiac output of a previously diseased heart, or lead to cardiac failure in hypertensive patients whose cardiac load is already increased by the elevated blood pressure.

According to WHO, there are around three-quarters of a million alcohol-related deaths each year. Alcohol-related diseases and injuries account for between three to four percent of the annual global burden of disease and injury. Alcohol is a significant factor in hospital admissions, road traffic accidents, accidental drowning, homicide and suicide.

The 1997 Dangerous Drugs Board Annual Report reported 2,715 cases of alcohol abuse. Almost 43 percent of the cases used beer and 12 percent used gin. Quite apart from the problems affecting individuals, alcohol is implicated in a range of social problems including domestic violence, marital breakdown, absenteeism from work, and child abuse. Young people can be particularly vulnerable to acute alcohol effects because of their lower tolerance to alcohol, their lack of experience with drinking, and their more hazardous patterns of drinking which include episodic drinking in high-risk situations.

While there have been past efforts to respond to the Philippine substance abuse problem, much remains to be done particularly with prevention, treatment and rehabilitation. The current program aims to address the multidimensional substance abuse problem through actual provision of therapeutic, rehabilitative and aftercare services. There is a need for the establishment and operation of a Substance Abuse Prevention, Treatment and Rehabilitation Center in each region that is truly appropriate and sensitive to the Philippine setting. Likewise, a Substance Abuse Prevention Nook need to be established in colleges and universities where information on psychoactive substances must be made available.

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the prevalence of diseases and other health-related effects of substance abuse.
   (Baseline data is established in 2000)

Risk Reduction Objectives

1. Reduce the demand for non-medically prescribed psychoactive drugs.
   (Baseline data is established in 2000)
2. Reduce the percentage of the population that has ever experienced using illegal drugs and alcohol.
   (Baseline data is established in 2000)
3. Reduce access to illegal drugs and alcohol.
   (Baseline data is established in 2000)

Services and Protection Objectives

1. Increase the number of facilities providing services for the effective treatment, rehabilitation and after care of persons with substance abuse-related problems.
   (Baseline data is established in 2000)

2. Establish reliable data-base information system for substance abuse and its health-related effects.
3. Strengthen the development and implementation of local and national policies and programs for the prevention and control of substance abuse and its public health consequences.
4. Promote local level activities to enhance community structures and responses to substance abuse-related problems.
5. Strengthen law enforcement activities related to the trade and use of illegal drugs and alcohol.

TOBACCO SMOKING

Cigarette smoking harms a person's bodily organs and is the most important single preventable cause of death. It adversely affects nearly every system and function of the body, particularly those in the respiratory and cardiovascular systems. It causes malignancies and adverse effects on organs that have no direct contact with the smoke itself. It increases the risk of cancers and it is also a causative factor in impotence, infertility, blindness, hearing loss and bone loss. It exerts its effects on the heart by raising blood pressure and heart rate.

In the early 1950s, there were already proofs that smoking increases the risks of developing lung cancer and heart disease. Since then scientific evidences have accumulated to support this claim. There are now more than 70,000 medical articles detailing the dangers of smoking. Nicotine is the substance that creates dependence on tobacco and makes one addicted to cigarettes. Therefore, efforts at primary prevention must focus on preventing initiation to tobacco use and stopping smoking.

Active smoking is implicated in 83 percent of all cancer cases and 30 percent of all cancer deaths. Persons who smoke two or more packs a day are known to have 15 times greater risk from lung cancer deaths than non-smokers. Smoking is also known as a possible cause of death from cancer of the oral cavity, larynx, esophagus, bladder, pancreas, pelvis, stomach and cervix. It is also the most important risk factor for coronary heart disease causing 25 percent to 35 percent of all deaths from cardiovascular ailments. It causes 77 percent of all COPD, evident in chronic bronchitis and breathlessness among smokers. Numerous other adverse health conditions attributable to smoking are peptic ulcers and pregnancy complications such as low birth weights, prematurity, spontaneous abortions, stillbirths and sudden infant death syndrome.

Passive smoking, also called involuntary or second-hand smoking refers to breathing other people's smoke by a non-smoker and results in similar risks for cancer, cardiovascular and other diseases. Infants and children of parents who smoke are more likely to be admitted to hospitals for bronchitis or pneumonia and more likely to experience chronic cough more frequently. A significant dimension to the problem of smoking should be the protection of non-smokers from involuntary exposure to tobacco smoke. Non-smoking should be a standard practice in confined or enclosed areas.

The 1989 National Smoking Prevalence Survey conducted by the Lung Center of the Philippines showed that almost half (46 percent) of all adults 18 years old and above are smokers. Smoking starts at a mean age of 22 years in urban areas and 24 years in

rural areas. A grimmer picture shows that 17 percent of the youth aged 11-16 years are already smoking. The survey showed that 40 percent of schoolboys and 19 percent of schoolgirls are smoking.

Another national survey conducted by FNRI in 1998 showed that 33 percent of Filipinos were smokers and 13 percent were ex-smokers. Among the respondents, 75 percent were male while 18 percent were female. The rate of smokers among the different age groups revealed the following: 58 percent smokes among the 60 years old and above; 52 percent smokes among the 40-54 years old; and 39 percent smokes among the 20-39 years old. Another survey conducted among high school students found a smoking prevalence of 28 percent, with the average onset of smoking at 14-17 years old (*Alyson et al.*).

The 1998 NDHS disclosed that 60 percent of the 12,401 households surveyed had smokers. Furthermore, the respondents' perceptions of the effects of smoking showed that 34 percent believes that smoking causes lung cancer and 46 percent believes that smoking causes lung diseases. However, there were misconceptions on the effects of smoking: 24.8 percent believes that smoking causes tuberculosis while 6.6 percent believes that smoking has no effect on the body.

Around 20,000 Filipinos die every year due to smoking-related diseases. It is esumated that smoking-related diseases in 1999 affected 252,460 Filipinos, 80 percent of these will be men in their productive years and 5 percent of them will die from these diseases. It estimated the number of cases for the four major smoking-related diseases: 3,318 cases of lung cancer, 61,863 cases of chronic obstructive pulmonary disease (COPD), 89,391 cases of coronary artery disease (CAD) and 97,888 cases of cardiovascular disease (CVD). Premature deaths from these cases were estimated to cost an annual loss of 13 billion pesos. Even with annual revenue of 21.4 billion pesos from the tobacco industry, the nation still has an annual net loss of 25 billion pesos. This is due to the total annual loss of 46.4 billion pesos from the costs of smoking-related diseases (*Dans et al.*).

National Objectives for Health by 2004

Health Status Objectives

1. Reduce the morbidity and mortality from diseases associated with tobacco smoking.
   (*Note: Health status objectives specific for each disease resulting from tobacco smoking are discussed in corresponding sections e.g., CVD, cancer among others.*)

Risk Reduction Objectives

1. Reduce the prevalence of tobacco smoking among children 6-11 years old to 5 percent; among 12-19 years old to 20 percent; and among 20 years old and above to 40 percent.
   (Baseline: prevalence of smoking among 6-11 years old is 15 percent; among 12-19 years old is 29 percent; and among 20 years old and above is 46 percent in 1998, FNRI)
2. Reduce the percentage of initiation to smoking by age 20 years to 27 percent.
   (Baseline: 39 percent in 1998, FNRI)
3. Increase the percentage of smokers who quit smoking to 16 percent.
   (Baseline: 13 percent in 1998, FNRI)
4. Increase the level of awareness on the negative health effects of smoking to 80 percent.
   (Baseline: 34 percent awareness that smoking causes lung cancer and 46 percent awareness that smoking causes lung diseases in 1998, NDHS)

C. Services and Protection Objectives

1. Impose national prohibition of smoking in all public conveyances and in all enclosed public areas.
2. Impose progressive ban on tobacco advertisement.
3. Impose ban on the sale of cigarettes to minors.
4. Impose the labeling of health warnings on tobacco packs.
5. Impose additional taxes on the manufacture and sale of tobacco.
6. Provide alternative agricultural crops to tobacco growers.
7. Establish smoking cessation clinics in all DOH hospitals.
   (Baseline: only one hospital in 1999, DOH)
8. Include anti-smoking educational program in elementary and high school curriculum.

5
MONITORING THE HEALTH OF THE FILIPINO PEOPLE

Monitoring is an ongoing process of collecting and analyzing information about program implementation. It involves regular assessment of whether activities are being carried out as planned and how the activities are being done. Monitoring is not only a way of following up progress of planned activities. It can also serve as a tool for identifying problems and implementation bottlenecks. A critical component of monitoring is giving feedback to the staff and recommending solutions before they cause delays. Data collected should be immediately processed, analyzed and disseminated to people who can act and react. Monitoring is not completely separable from evaluation, except that monitoring focuses on ongoing implementation while evaluation focuses on effectiveness and impact.

Keeping a close watch on the health status of the population which is referred to as health surveillance is equally important. Health surveillance is an essential monitoring tool and involves the regular collection, analysis, interpretation and dissemination of health information. Timely, relevant and consistent data and health information are important to policy development, planning and implementation of effective health programs.

The DOH as lead agency and other health sector stakeholders will monitor and evaluate the implementation of the National Objectives for Health (NOH). Several methods will be used, such as review and analysis of regular records and reports from the field health implementors, sentinel surveillance system, monitoring and evaluation reports from DOH, researches, population surveys, vital registry and other records from other agencies and organizations. In the Philippines, monitoring and health surveillance relies on data on morbidity, mortality and other health indicators collected by various agencies, both government and private through routine information systems and special surveys and studies.

Birth and death statistics are obtained from birth and death certificates submitted to local civil registrars and consolidated by the National Statistics Office (NSO). Morbidity data are obtained from several DOH information systems in local health offices and hospitals. These are the Field Health Service Information System (FHSIS), National Epidemic Sentinel Surveillance System (NESSS), and special surveillance systems for HIV/AIDS and poliomyelitis among others.

Data on health service delivery and program accomplishments are obtained from the FHSIS and from special surveys like the National Demographic and Health Survey (NDHS) conducted by the NSO and the National Nutrition Survey (NNS) conducted by the Food and Nutrition Research Institute (FNRI). Demographic data (e.g., population distribution by gender, age and geographic area and annual growth rates) are obtained from the national census conducted every 10 years. Data obtained during the census years serve as bases for population projections during intercensal years.

Monitoring and Evaluation Reports from the DOH and Other Agencies

Monitoring and evaluation reports provide basis for program planning or re-direction of strategies, policies and proper resource allocation. They also serve as basis to validate reports from field implementors and show the support and commitment of the health service providers in the attainment of national goals and targets for health. A standard monitoring checklist to be administered by the regional and LGU staff either monthly or quarterly will be developed. Such regional and LGU monitoring reports will be consolidated at the DOH central office. In addition, inter-zonal meetings will be organized periodically and used as venues for evaluating progress and impact of key programs and projects. The reports will provide the overall picture of health program implementation for use of program coordinators to identify strengths and improve weaknesses. Likewise, this should be presented and disseminated yearly to decision-makers, program implementors, and other stakeholders.

Monitoring and evaluation reports from other government agencies, international organizations, NGOs and other institutions could validate the implementation status of the NOH. These reports could be used to redirect strategies and activities to achieve health goals and objectives.

Field Health Service Information System (FHSIS)

Major sources of data and information for monitoring the implementation of the NOH are regular records and reports from RHUs and BHSs. Data on health program accomplishments, delivery of health services and morbidity reports are regularly generated from these health facilities through the Field Health Service Information System (FHSIS).

FHSIS consolidates most of the public health statistics from government health centers nationwide. This passive reporting system gathers information on notifiable diseases and indicators of major health programs such as those on maternal and child health, family planning, communicable disease control and environmental health. Data collection starts at barangay health stations (BHS) and sent to rural health units, provincial, city, regional and national health offices. A copy of the consolidated provincial report is submitted to the regional health office

for its own use. The DOH central office receives copies of quarterly reports reflecting a national health picture. The system is paper-based from the BHS to RHU level and computer-based from the provincial, city and national levels.

With this system, the midwife from each health facility records all patients and clients seen daily. The midwife submits monthly reports to the public health nurse (PHN) who consolidates all these reports quarterly for decision-making, planning and supervision at the municipal level.

Information from the FHSIS is limited only to outputs from government field health facilities. Reports from private and government hospitals and private doctors need to be collected to come up with a more complete picture of the implementation of health programs and the health status of the population.

Ideally, data should be analyzed weekly at the RHU level, monthly at provincial and city levels, quarterly at the region and annually at the national office. Lack of reporting forms and computer malfunction cause delays in reporting. Insufficient data management and analysis skills at local levels hinder full utilization of the data.

National Epidemic Sentinel Surveillance System (NESSS)

The NESSS is hospital-based. It monitors 14 infectious diseases with epidemic potential in sentinel hospitals nationwide. Five diseases (cholera, typhoid, malaria, hepatitis A and B) are laboratory-confirmed while the rest (dengue, diphtheria, leptospirosis, measles, meningococcal disease, neonatal and non-neonatal tetanus, pertussis, and rabies) are clinically confirmed using standard case definitions. FETP-trained staff at central, regional and some local health offices regularly visit the hospitals and interview patients or their guardians. Data collected are entered into a computer and analyzed weekly. Reports are issued to key health officials and program managers. Information on the trends of the diseases being monitored is given. Trained personnel from FETP, regional or local epidemiology and surveillance units investigate outbreaks detected.

While there are sentinel hospitals in every region, the geographic representation of the sentinel hospitals varies among the regions. In some regions, the system obtains data from all provincial hospitals and from some private hospitals. In other regions, data are obtained only from hospitals within the province where the regional health office is located. The system could be improved by expanding the network to include all provincial hospitals initially, followed by district hospitals and major private hospitals.

Poliomyelitis, Measles and Neonatal Tetanus Surveillance

Acute flaccid paralysis (AFP) surveillance was started in 1992 as part of the polio eradication initiative. This system identifies remaining areas in the country where there is wild poliovirus. AFP cases seen by public and private health personnel at hospitals, clinics or health centers are investigated. Stool samples are obtained and sent to the Research Institute for Tropical Medicine (RITM) for virus isolation. Cases are followed-up after 60 days to determine whether or not they have residual paralysis. No wild poliovirus has been isolated in the Philippines since 1993. However, to be certified as polio-free, "quality" surveillance (i.e., non-polio AFP rate of one per 100,000 population of the

less than 15-year age group, 80 percent adequate stool collection, and 80 percent 60-days follow-up rate) should be maintained for three consecutive years.

Laboratory-based measles surveillance was started in 15 sentinel hospitals nationwide in May 1999 as part of the measles elimination campaign. Blood samples are obtained from suspect measles cases and sent to RITM for detection of measles IgM antibodies. The system identifies areas where the measles virus is circulating and when local transmission is halted to detect imported cases. The system is being expanded gradually to include all government and private health units and school clinics within the next five years.

Neonatal tetanus is another disease for elimination as a public health problem. To identify areas still at risk, neonatal tetanus surveillance needs to be strengthened at the community level. While the NESSS monitors hospitalized cases, the FHSIS needs to include this disease in the list of notifiable diseases. Data on tetanus toxoid coverage is also needed.

HIV/AIDS Surveillance

The HIV/AIDS registry is a passive surveillance system started in 1988. All laboratory-confirmed HIV-positive cases and AIDS cases are reported to DOH. The reports contain information on gender, age, possible mode of transmission and status of cases. Monthly reports are issued by FETP.

Active HIV serologic surveillance (HSS) was started in 1993 among high risk groups (female commercial sex workers, men who have sex with men, injecting drug users) in key cities nationwide. From two sites in 1993, the system now includes 10 cities nationwide. Blood samples are collected from individuals and tested for the presence of HIV antibodies. This is done to monitor HIV zero prevalence among high risk individuals.

Aside from monitoring HIV zero prevalence, behavioral sentinel surveillance (BSS) was started in 1997 to obtain information on risk behaviors like unprotected sex and sharing of injecting equipment among high risk groups in the 10 sites.

Both the HSS and BSS serve as an early warning system to detect "hot spots" with a potential for rapid spread of the HIV virus. Such information is useful in planning, implementing and monitoring the impact of HIV/AIDS prevention and control measures. At present, the DOH is working to institutionalize the HSS and BSS systems in at least five local government units.

Injury Surveillance

In 1991, FETP started surveillance for fireworks-related injuries in three Metro Manila hospitals. By 1997, the system had expanded to include 10 hospitals. As of 1998, in collaboration with the STOP DEATH program, all DOH hospitals are included in the system.

Emergency room-based injury surveillance was piloted by FETP in 1995. The system is being revived this year in collaboration with the STOP DEATH program. Such a system will provide information not just on fireworks-related injuries but all types of injuries. This information is helpful in the design and evaluation of injury prevention programs.

Hospital Information Systems

During the past decade, there have been several initiatives to systematically collect information from hospitals. One such initiative was undertaken by the Health and Management Information System (HAMIS) project that designed several computer-based modules to collect and analyze hospital statistics on diseases, management procedures and logistic system. A more recent initiative is the Hospital Epidemiology Program (HEP), a window-based system containing several modules ranging from morbidity and mortality data to financial and logistic information. The Integrated Community Health Services Project (ICHSP) is developing a district-based health information system that will integrate data from hospitals and health centers.

Data on hospital occupancy rate, total admissions, total discharges, hospital drugs, average length of stay, leading causes of discharges and leading causes of hospital deaths are among the few indicators that can be taken from hospital data that are gathered semestrally in 54 DOH hospitals nationwide. The DOH Hospital Operations and Management Services (HOMS) collects and consolidates the data.

Adverse Drug Reactions and Adverse Events Following Immunization Surveillance

The Bureau of Food and Drug (BFAD) is conducting surveillance for adverse drug reactions (ADR). This year, the DOH and WHO are working on an Adverse Events Following Immunization (AEFI) surveillance system patterned after the system that was set up during the mass measles vaccination campaign conducted in 1998. The ADR and AEFI systems are part of the DOH initiative to ensure the safety of drugs and immunizations.

Researches and other Similar Studies

Other sources for monitoring and evaluating the implementation of the NOH are researches and studies commissioned by the DOH or done by academic institutions, NGOs, professional organizations, and other health institutions. These researches provide short-term data such as baseline information for new programs and evaluation of on-going programs. Usually, these researches are done in between the national demographic and health survey. These are undertaken to develop and test new instruments for measuring key health indicators and demonstrating changes over time and among various locations.

Population Surveys

Many nationwide surveys by other agencies can be used as health data source for monitoring and evaluating the status of the NOH. The National Statistics Office (NSO) is mandated to conduct the National Demographic and Health Survey (NDHS) every five years. The NDHS is a rich source of health knowledge regarding attitudes and practices related to infectious, degenerative, environmental and occupational diseases and use of health facilities among other relevant health indicators. The NSO conducts the census of Philippine Population and Housing every 10 years and the Labor Force Survey that also include information on family planning, maternal and child health and occupational health-related data. The Food and Nutrition Research Institute (FNRI) conducts a nutrition survey every five years. The Population Commission (Popcom) conducts regular fertility surveys.

Regular Health Facility Assessments

Regular health facility assessments include quality-oriented tool for monitoring the day-to-day per-

formance of health workers. An example is the after training follow-up on health workers trained on clinical skills to assess whether performance has improved. This is a component of IMCI training. Health facility surveys are conducted for some public health programs like ARI and CDD to assess clinical management practices; evaluate drugs and supplies to guarantee adequate management of cases; organization of work in the health facility; and solution to problems in implementing clinical management protocol.

Vital Registry Records and Reports

Information on crude birth rate, crude death rate, infant mortality rate, maternal mortality rate, leading causes of death, leading causes of infant death, leading causes of maternal death come from birth and death certificates that are submitted to all local civil registrars (LCR) nationwide. LCR reports are processed, consolidated and disseminated by the NSO, which in turn provides a national data on births and deaths, which are important indicators of the state of health of the nation.

Minimum Basic Needs (MBN) Data

This system collects data on health, education, social services and other related statistics, and is done only in fifth- and sixth-class municipalities nationwide. Community volunteers monitor and collect these data every six months in some areas and every year in others. The output is by barangay. Consolidation is done through the National Anti-Poverty Commission.

The Challenge of Monitoring and Health Surveillance

There is no lack of health data and other related statistics. They are regularly collected, processed and analyzed by several government agencies and private institutions. Development planning, decision-and policy-making both at the national and local government levels rely on data from several key information systems. However, the absence of standard indicators results in data outputs that are not comparable or consistent.

As a tool for monitoring and evaluation, information systems must serve the different needs for reliable and consistent data of the community, health workers, health facility managers, district and regional health officials, national policy makers, and international donors. Data collected must be useful for all health sector stakeholders.

One major monitoring and evaluation concern is the timeliness of available data. Since data collection is difficult, time-consuming, and expensive process, information produced by the system are not immediately analyzed and disseminated to users. A deficient or poor feedback system results in considerable time lag in data dissemination and critical information gaps for decision-making.

The task ahead is to develop efficient and cost-effective data collection procedures and feedback system for timely, accurate and consistent information so that results may be utilized accordingly. The health information system should be accessible to LGUs, international agencies and other stakeholders for quick referrals.

Assessment of current health information system, including monitoring and evaluation tools should be done with an eye to develop standard and integrated health indicators. System update should also consider integrating emerging information needs for quality of care, cost and coverage indicators among others. This will be particularly useful in verifying the immediate results and impact of the NOH.

Health surveillance on the other hand may be made more effective by establishing more Regional Epidemiology and Surveillance Units (RESUs) to cover all regions and Local Epidemiology and Surveillance Units (LESUs) in at least 50 percent of provinces and 5 percent of cities with more trained medical and nurse epidemiologists. There is also a need to expand the NESSS to cover all provinces and to institutionalize the HIV/AIDS serologic and behavioral surveillance in at least five cities.

Existing special surveillance systems for diseases targeted for eradication or elimination as public health problems should be strengthened and surveillance for non-communicable diseases improved.

6
SHARING RESPONSIBILITIES FOR HEALTH

The National Objectives for Health for 1999 to 2004 offers a vision of improved health for all Filipinos. It sets the direction on where we want to be and what we want to achieve in terms of our health. While individuals, families, communities and the government and private health sectors are the major responsible agents for the attainment of these goals and objectives, the challenge for the attainment of improved health for all lies in the partnership of all stakeholders in the delivery of health programs and services at all levels, particularly at the grassroots. Collectively and individually, every stakeholder must share in the responsibilities of attaining a healthier and more productive life for all Filipinos.

National Government Agencies

The *Department of Health* continues as the lead agency for the health sector and convenor of all health stakeholders to ensure strong collaboration for health promotion and disease prevention and control. Through the DOH, the government formulates and enforces national health policies, standards and regulations. It provides the direction and national plans for health programs and services with responsibilities that include:

- Health research and development
- Health surveillance and information system
- Resource generation for priority health services
- Technical assistance and logistics support to local health services
- Human resource capability-building on health
- Health promotion and advocacy
- Direct service delivery for specialized health care
- Health care financing
- Health emergency preparedness and response
- Monitoring, assessment and evaluation of the health situation
- Quality assurance for health care
- Networking for sectoral actions on health

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The concern for health is an integral part of the mandate of several national government agencies and serves to complement DOH policies, standards, regulations and guidelines on health. Impact on the well-being of the individual and safety of the community are important yardsticks in the crafting of national development policies across all sectors. While economic activities generate resources for development, they also create levels of degradation, social decline, inequity and adverse environmental and health impact on the people and the community.

It is not unusual for the DOH to be working in tandem with the Department of Labor and Employment (DOLE) in ensuring the enforcement of laws, rules and regulations concerning the health and safety of workers. Or for that matter with the environment sector in monitoring dwindling safe water supply, and wastes disposal problems and with the tourism sector for other health issues associated with the hospitality and leisure industry. At the same time, the DOH relies on the educational system and government and private communication networks for the promotion of healthy lifestyle and other health-seeking practices.

Several other government agencies are working in tandem with the DOH in providing specific health-related services. The *Department of Education, Culture and Sports (DECS)* and the *Commission on Higher Education (CHED)* have been in the forefront of health promotion through the integration of health and nutrition education in the school curriculum at all levels. Health programs and services are evident in the maintenance of health clinics in schools that provide first-aid treatment and health counseling at the very least. As a rule, elementary schools encourage children to avail of preventive health services such as immunization and to practice personal hygiene. The *CHED* in particular plays a big role in the production of health professionals and in setting the curriculum for the health professions.

With the global call for sustainable development, the *Department of Environment and Natural Resources (DENR)* has developed an agenda that recognize the connection of population, resources and environment and the role of the family and community in the dynamics of these relationships. Environmental ordinances, rules and regulations, especially those that impact on public health and safety must pass through a process of public consultation and consensus building. The DENR monitors development trends and enforces control measures to lessen deterioration of communities due to pollution, shortage of water supply, flooding, indiscriminate land conversion and other activities that impact on human health.

The *Department of Labor and Employment (DOLE)* shares with the DOH the interest for the well-being of workers and enforces corresponding rules and regulations (including child labor laws), and standards regarding labor and employment-related health issues. It monitors condition in the workplace that impact on occupational health and safety and promotes measures to mitigate them. The agency has grown vigilant against HIV, AIDS and other STDs by promoting their prevention and providing health education in its regular seminars for overseas workers. The agency strongly advocates for the inclusion of family planning and maternal and child health services in the workplace. In

promoting these services particularly to industrial workers, the DOLE puts emphasis on how the practice could contribute in maintaining a healthy workforce and higher productivity.

Integrated to the social services of the *Department of Social Welfare and Development (DSWD)* are health-related services and programs particularly for displaced children (e.g., street children, orphans, children victims of war and violence), women victims of war and violence, the elderly and disabled. The agency maintains shelters for them and coordinates with other government agencies (DOH, DILG, DECS and DOLE among others) for other support services. With the increasing needs of OFW's for psychosocial services, the DSWD has also deployed social workers and counselors to selected Philippine embassies abroad.

The *Department of the Interior and Local Government (DILG)* facilitates the implementation of health programs in local government units. In coordination with the LGUs, the DILG is in a position to promote public health through local initiatives and action agenda in their respective local development plans, programs and projects. The DILG is also in the best position to address the root causes of violence and conflict at the LGU level. Peace and order allows the uninterrupted delivery of health and other social services that make for decent living particularly at the grassroots where they are most needed.

The *Department of Agriculture (DA)* serves the needs of the entire population through food production and food security. It also monitors the safety of produce and the harmful effects of wrong food production practices to the health of the people. It enforces standards and regulations for food production from agricultural lands, freshwater and marine resources. Together with the DOH, DA monitors and provides preventive and control measures against food and water-borne organisms and harmful substances in food products that endanger the health of the people.

Health research and development continues to be a major undertaking of the *Department of Science and Technology (DOST)*. It has promoted research on the country's medicinal plants that allow their use as remedies at the community level. It also supports and encourages institutional competence and technical capability building of other agencies to undertake health research through financial grants and training.

Several other agencies of the national government play direct or indirect but pivotal roles in the promotion of health and the prevention and control of diseases. Among these agencies are the *Philippine Information Agency (PIA), Department of Public Works and Highways (DPWH), National Economic and Development Authority (NEDA), Department of National Defense (DND), Department of Transportation and Communication (DOTC)*, among others.

Local Government Units

Consistent with local autonomy and decentralization, as mandated by the 1991 Local Government Code, the delivery of basic services and the operation and maintenance of local health facilities are devolved to the provinces, cities and municipalities. Each local government unit is responsible for a minimum set of health services and facilities in accordance with established national policies, guidelines and standards. The devolution of health services conferred to the local government several major functions:

- Formulation and enforcement of local ordinances related to health, nutrition, sanitation, and other health-related concerns
- Implementation of health programs in accordance with national policies, standards and regulations
- Provision of promotive, preventive, curative and rehabilitative health programs and services
- Operation and maintenance of local health facilities (e.g., district and provincial hospitals under the provincial government; rural health units, health centers and barangay health stations under the municipal or city government)
- Health human resource capability building
- Establishment of a functional local health information system
- Monitoring and evaluation of the implementation of various health services
- Establishment of partnership with all sectors including inter-local government unit collaboration in health promotion
- Provision of funds for health at the local level

Academic and Research Institutions

Government and private academic and research institutions undertake health-related research to strengthen the information base of the health development sector. They also provide excellent centers for the training of health and allied professionals, health education and health promotion. They assist the government in conducting health policy studies, development of models for health financing and information systems and other technical assistance and services.

International Organizations

International organizations provide financial grants and technical assistance for health sector research, human resource capability-building programs, delivery of health services, upgrading of health facilities and other health sector development initiatives.

Media

A well-informed public is more responsive to interventions concerning its health and well-being. For nationwide health information and promotion campaigns, the print and broadcast media are still the most effective in terms of audience reach. For health advocacy, the media also provide the best forum for public debates that are accessible to all stakeholders. A strong public opinion is the best incentive for more informed and responsive decision-making and effective policy-making at the national level.

Non-government Organizations (NGO), People's Organizations (PO), and Socio-civic Groups

They provide broad-based participation to activities that promote responsive health policies and programs. They have the capacity to mobilize communities for health promotion and prevention of risk behaviors and practices, advocate for social action, generate resources at their level, and organize communities for direct service delivery and technical assistance.

Business and Labor Groups

Business and industry should produce goods and services following standards set by the government and ensure product safety especially for human consumption or use. Health and health-related products must be of the highest quality and standard. The sector should also provide safety measures in

work places and maintain a healthy environment that promotes higher productivity. The business and labor sectors also provide crucial resources for implementing health and health-related activities.

Health and Allied Professionals

They are duty-bound to provide promotive, preventive, curative and rehabilitative health services and to conduct health education and counseling to their patients. Health professionals provide the frontline services for the health needs of the population.

Individuals and Families

The individual as the primary beneficiary of health services should practice healthy lifestyle and healthy habits (non-smoking and abstinence from alcohol, proper nutrition, physical activity, personal hygiene) and to serve as health advocates to make such interventions effective. Proper health-seeking behavior such as submitting oneself to necessary screening test and immunization must start with the individual. The family should provide health-related support and education to its members, particularly preventive health care and early curative care during time of sickness. Families must work together to promote and ensure healthy home and community environment.

Collaboration for Common Action and Interventions for Health

The implementation of health programs and services must be anchored on the basic principle of collective and individual responsibility. The needs and concerns for specific health issues define the roles and responsibilities of each of the stakeholders. The National Objectives for Health provides the opportunities for partnership and the common grounds for collaboration among government agencies (including academic and research institutions), civil society (NGOs for health, media, international cooperating agencies, business and industry), community and individual beneficiary of health services. Each can serve in any of the following:

- Implementation of national policies and development strategies consistent with the objectives for health and the promotion of improved quality of life
- Mobilization and management of resources for health
- Utilization of available community resources for health
- Dissemination of health information
- Promotion of appropriate technologies for health
- Innovation of indigenous ways and practices on health
- Training of human resource to improve capabilities for health
- Networking and strengthening of institutional linkages
- Practicing healthy lifestyle

Defining the key roles of stakeholders is central to the successful delivery of health services and in achieving the goals for improved health for all. It is also equally important for each stakeholder to help one another in building and strengthening the capacity for health, consolidating efforts at health information and education and generating health financing means and strategies especially at the community level.

The government provides the statutory rules, regulatory mechanisms and command-control measures for health to ensure the well-being of all Filipinos and their access to health services. It mobilizes re-

sources and other public and private agencies to respond to the needs of the health-seeking population. It provides the infrastructures for health and corresponding manpower. It taps international cooperating agencies and organizations for technical, financial assistance and capability building for health.

Institutions such as media, schools and research organizations are information centers and by their very nature are able to influence behaviors, attitudes and lifestyles and could help advance health-promoting activities and values. They also provide networks and structures for information dissemination, technology transfer, resource sharing, exchange and partnership. They provide information that can be the basis for more responsive health policies and the forum for public debates and consensus building among stakeholders that allow them to contribute in shaping common agenda.

Business and industry groups could also use their expertise and resources for health-related research and production of goods that improve the health of consumers. Processing and production machines, materials and stocks should not endanger the lives and health of workers.

Communities must focus on maintaining healthy environment by protecting water supply from contamination and avoiding indiscriminate throwing of domestic garbage and other human wastes. Existing indigenous health practices, knowledge and skills should be sustained, encouraged or upgraded. The individual as the beneficiary of interventions should have the proper health-seeking attitude and health-promoting lifestyle.

By sharing responsibilities for health, national government agencies, local government units, the private sector as well as communities, families and individuals will all become major stakeholders and contributors towards accomplishing the national goals and objectives for health and attaining our vision of health for all Filipinos.

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