

The Health Curriculum in Philippine Basic Education

Volume 2

A resource book on Health for teachers

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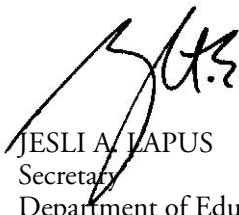
FOREWORD

The development of our country in the new global order requires us to invest in two important social pillars—education and health. Good education, especially basic education, is a most crucial tool to open opportunities for our people including the capacity to stay healthy. Our people can then pursue the necessary education to excel. Education and health are clearly inseparable issues. They are mutually reinforcing and contribute to spiraling positive benefits.

The Department of Education (DepEd) supports the review of the health curriculum in basic education. It is DepEd's thrust to continually make the curriculum relevant to the needs of our people and our country.

This publication recognizes the primacy of the teachers in basic education and the role they play as the critical messengers of knowledge, skills and attitudes that will empower our children and transform them into responsible citizens. Developed as a classroom resource material, it provides teachers with a ready source of information that can easily be translated into lessons on health for students. Enhancing the competencies of our teachers on health education will, in turn, make them effective in instilling the value of well being.

DepEd will continue its efforts to improve the education and health of our students. It will continue to work with different stakeholders, both within and outside government, to carry out its mission of nation building.



JESLI A. LAPUS
Secretary
Department of Education

INTRODUCTION

Recent statistical findings show that one out of 10 elementary students graduate from university. The Department of Education reported that in school year 2007-2008, 5.99 percent of students dropped out of elementary school while an 7.45 percent dropped out before finishing high school.

Poverty is not the sole reason for dropping out. Numerous factors—that include psychological, sociological and cultural dimensions—contribute to the drop-out rate.

It is the physiological reason that is often ignored. With poor sanitation and hygiene, children get sick more often and miss out on quite a number of school days. When a child finds it difficult to make up for the missed days, they start cutting class and finally drop out.

Good education predicts good health, and good health contributes to good education. Disparities in health and in educational achievement are closely linked. It is like a vicious cycle that never ends – poor health cause kids to drop out; children who do not get a good education tend to continue to have poor health and poor health habits. As adults, they would not be able to educate their own children to maintain good health thus perpetuating another round of dropping out.

This is a rather simplified version of what happens in reality in most Philippine provinces, including densely populated urban areas. Hence, the Social and Human Sciences Committee of the UNESCO National Commission of the Philippines decided to embark on a project to facilitate the implementation and dissemination of this resource book on Health, particularly for the benefit of public school teachers.

The book is divided into the 10 health areas prescribed by the World Health Organization. For clarity, Mental Health has been separated from Personal Health, so it could more comprehensively deal with the common mental and emotional issues children face. Personal Health remains dedicated to

making a personal health management plan which includes being well-groomed, caring for body parts and sense organs, observing good posture, having regular medical and dental check-ups, obtaining adequate sleep and rest, and achieving a desirable level of physical fitness.

In most schools, the teaching of Health is limited to discussing the human body. The chapter on Growth and Development discusses anatomy briefly, and focuses more deeply on the habits and practices needed to keep the body systems healthy. The chapter on Nutrition covers food and food groups that are good for the body.

As the adage goes, an ounce of prevention is worth more than a pound of cure. As such, the chapter on Health Promotion and Prevention of Diseases more than adequately discusses preventive practices to keep the body healthy. Fittingly, Substance Use and Abuse follows suit as these two are major culprits in causing diseases. Safety and First Aid covers actions that must be taken keep a person safe in various situations.

Family Health deals not just with caring for family members but also with reproductive health issues and population control. This is quite important because the country's burgeoning population leads to a deepening poverty and a more hungry populace.

Consumer, Community and Environmental Health do not deal with the body directly but with a person's surroundings. Consumer Health makes people aware of their rights as consumers and how to make informed decisions regarding health products and information. Community Health deals with the overall conditions of the community – especially the health problems that could beset a community like disease outbreaks, vermin, pollution. Environmental Health, on the other hand, tackles the immediate environment of a person, particularly his home. Keeping the home healthy invariably leads to a healthy person.

Parallel to the production of this book is the effort of the Project Team in providing technical assistance to the curriculum developers of the Department of Education. A series of consultative meetings have been held wherein the Team gave insight on current health trends and issues. These insights were of great help in adding to the richness and comprehensiveness of the learning competencies in Science and Health, MAPEH (Music, Arts, PE, Health), EPP (Edukasyong Pantahanan at Pangkabuhayan), EP (Edukasyong Pagpapahalaga), and Araling Panlipunan.

As well, the Project Team lent its expertise in revising the course offering of the Commission on Higher Education for Bachelor of Secondary Education major in MAPEH. There was a need to augment the number of “health-

knowledgeable” teachers presently handling health subjects in both elementary and secondary education. However, the original curriculum offered very little health content. BEED (Bachelor of Elementary Education) content courses offered only two subjects that are clearly “health,” one of which was a practicum course. References were also updated with new and more appropriate health-related facts and concepts.

Because this whole project began in 2004, with a review of Science and Health textbooks, the project team also teamed up with the Department of Education in conducting a seminar-workshop for textbook writers and publishers. The objective is primarily to prevent further errors and inaccuracies from appearing in our textbooks.

Another offshoot of the project is training of sixth grade Quezon City teachers on Health Education upon the request of the Quezon City government. As part of their continuing education, they were given training sessions in the summer of 2008.

This series of activities is part of an ongoing project spearheaded by the Social and Human Sciences Committee of the UNESCO. The textbooks review process resulted in a reference book with comments, suggestions and corrections for the major factual errors in the books. An electronic copy of this book, as well as the first reference volume, *The Health Curriculum in Philippine Basic Education, A review of the health content in public school textbooks*, is available free of charge upon request. Send an email to teachermeah@aol.com.

CHAPTER 1

GROWTH & DEVELOPMENT

G*rowth* refers to the physical changes that occur in a child.
Development focuses on the different skills that the child learns as he grows:

- ❑ Gross motor: using large groups of muscles to sit, stand, walk, run, keeping balance and changing positions
- ❑ Fine motor: using hands to be able to eat, draw, dress, play, write and do many other things
- ❑ Language: speaking, using body language and gestures, communicating, understanding what others say
- ❑ Cognitive: thinking skills—including learning, understanding, problem-solving, reasoning and remembering
- ❑ Social: interacting with others, having relationships with family, friends and teachers, cooperating, responding to the feelings of others

This chapter is primarily excerpted, with permission, from *Teaching health and wellness, a sourcebook for teachers*, published by the University of the Philippines Open University.

STAGES OF PRENATAL DEVELOPMENT

Development begins inside the uterus. Rapid growth occurs and the embryo's main external features begin to take form. This process is called *differentiation*, which produces the varied cell types (such as blood cells, kidney cells and nerve cells). A spontaneous abortion, or miscarriage, in the first trimester of pregnancy is usually due to major genetic mistakes or abnormalities in the developing embryo. During this critical period (most of the first trimester), the developing embryo is also susceptible to toxic exposures, such as:

- Alcohol, certain drugs, and other toxins that cause birth defects, such as Fetal Alcohol Syndrome

- Infection (such as rubella or cytomegalovirus)
- Radiation from x-rays or radiation therapy
- Nutritional deficiencies such as lack of folate which contributes to spina bifida, a congenital defect in which the spinal column is imperfectly closed so that part of the meninges or spinal cord protrudes, often resulting in hydrocephalus and other neurological disorders.

The embryo continues to grow for 280 days. At nine months, it is ready to be delivered as a full term baby. Table 1 outlines the stages of prenatal development

Table 1. Stages of prenatal development

<p>FIRST MONTH: Fertilization occurs Zygote implants itself in lining of the uterus Rapid cell division occurs Embryonic stage lasts from 2-8 weeks Nervous system begins to develop Embryo length - ½ inch</p>	<p>FIFTH MONTH: Mother feels reflex movements Fine, downy fuzz covers the entire body Ears & nose begin to develop cartilage Fingernails and toenails begin to appear Fetus hiccups, sucks thumb, kicks Length - 12 in. Weight - 14 oz.</p>
<p>SECOND MONTH: Heart & blood vessels form Head area develops rapidly Eyes begin to form detail Internal organs grow, especially the digestive system Sex organs develop rapidly & sex is distinguished Arms & legs form and grow Heart begins to beat faintly Length - 1 inch. Weight - 1/10 ounce.</p>	<p>SIXTH MONTH: Eyes & eyelids are fully formed Fat is developing under the skin At 21 weeks, the fetus can live outside the uterus. However, chances for survival are very low. Length - 14 in. Weight - 2 pounds.</p>
<p>THIRD MONTH: Head growth occurs rapidly Bone begins to form rapidly Digestive organs begin to function Arms, legs, fingers make spontaneous movements Fetus length - 3 in. Weight - 1 oz.</p>	<p>SEVENTH MONTH: Cerebral cortex of brain develops rapidly Lungs begin to mature Length - 17 in. Weight - 3 lbs.</p>
<p>FOURTH MONTH: Lower parts of body show rapid growth Bones are distinct in x-rays Reflex movement becomes more active Heartbeat can be detected by physician Sex organs are fully formed Length - 7 in. Weight - 5 oz.</p>	<p>EIGHTH MONTH: Subcutaneous fat is deposited for later use Fingernails reach beyond fingertips Fetus is aware of sounds outside the mother's body Length - 17 in. Weight - 5 lbs.</p>
	<p>NINTH MONTH: Hair covering entire body is shed Organ systems function actively Fetus settles into position for birth Length - 21 in. Weight - 7 lbs.</p>

DEVELOPMENTAL MILESTONES

These are sets of functional skills or age-specific tasks that most children can do at a certain age range. Pediatricians use milestones to help check how a child is developing. Although each milestone has an age level, the actual age when a normally developing child reaches that milestone can vary. Table 2 provides outlines developmental milestones in children from 0-5 years.

Middle childhood

Middle childhood, 6-10 years, brings many changes to a child's life. By this time, children can dress themselves, catch a ball more easily with only their hands and tie their shoes. Events such as starting school bring children into regular contact with the larger world. Physical, social and mental skills develop rapidly at this time. This is a critical time for children to develop confidence in all areas of life, through friends, schoolwork, sports, participation in the community.

During this time, children begin to become more independent from parents and family. They have a stronger sense of right and wrong. Awareness of the future begins to emerge, as well as an understanding about one's place in the world. Friendships and teamwork are given more attention as there is a growing desire to be liked and accepted by friends. Their mental skills are developing rapidly. They have a greater ability to describe experiences and talk about thoughts and feelings. Concern for others emerge and the focus on one's self lessens.

Adolescence

Early adolescence is marked by significant physical changes. Girls develop breasts, grow underarm and pubic hair and begin menstruating. Boys develop deeper voices, grow hair under the arms and around the genitals and begin to show other physical signs of sexual maturity.

In response to these physical changes, young adolescents—girls in particular—begin to be treated in a new way by their families and society. They may no longer be seen as just children, but as sexual beings to be protected—or targeted. These changes are complicated by the fact that girls mature at different ages.

Most early adolescents still think predominantly in concrete terms. They relate information and experiences to what they currently know and have a hard time thinking about the future or about things they have never been exposed to. Their ability to think abstractly—to project into the future and to understand intangible concepts—develops as adolescence progresses

Table 2. Developmental milestones in early childhood

Age	Gross motor	Visual-motor/ problem solving	Language	Social/ adaptive
1 mo	Raises head slightly from prone position, makes crawling motions	Has tight grasp, follows to midline	Alerts to sound	Regards face
2 mo	Holds head in midline, lifts chest off table	No longer clenches fist tightly, follows object past midline	Smiles socially (after being smiled or talked to)	Recognizes parent
3 mo	Supports on forearms in prone position, holds head up steadily	Holds hands open at rest, follows on circular fashion, responds to visual threat	Coos (produces long vowel sounds in musical fashion)	Reaches for familiar people or objects, anticipates feeding
4 mo	Rolls front to back, supports on wrists and shifts weight	Reaches with arms in unison, brings hands to midline	Laughs, orients to voice	Enjoys looking around environment
5 mo	Rolls back to front, sits supported	Transfers objects	Says "ah-goo," razzes, orients to bell (localizes laterally)	Enjoys looking at environment
6 mo	Sits unsupported, rolls both ways, puts foot in mouth in supine position	Reaches with either hand, transfers hand to hand, rakes and grasps	Babbles	Recognizes strangers
7 mo	Creeps	7-8 mo: inspects objects	Orients to bell (localizes indirectly)	7-9 mo: finger-feeds
8 mo	Comes to sit, crawls		Says "dada" indiscriminately	

9 mo	Pulls to stand, cruises, pivots when sitting	Pincer grasp, probes/ pokes with forefinger, holds bottle, throws objects	Says "mama" indiscriminately, waves bye-bye. 10mo: "dada/ mama" discriminately, orients to bell (directly). 11mo: one word other than dada/ mama, follows one-step command with gesture	Starts to explore environment, plays gesture games
12 mo	Walks alone	Releases voluntarily, mature pincer grasp, marks paper with pencils	Uses two words other than dada/ mama, immature jargoning (runs several unintelligible words together). 13 mo: three words. 14 mo: follows one-step command without gesture	Imitates actions, comes when called, cooperates with dressing
15 mo	Creeps upstairs, walks backwards	Builds 2-block tower in imitation, scribbles in imitation	Uses 4-6 words. 17 mo: uses 7-20 words, points to five body parts, uses mature jargoning (includes intelligible words in jargoning)	15-18 mo: uses spoon, uses cup independently
18 mo	Runs, throws objects from standing without falling	3-4 block tower, scribbles spontaneously, turns 2-3 pages at a time	Uses two-word combinations. 19 mo: knows eight body parts	Copies parents at household tasks, plays with other children
21 mo	Goes up steps, squats in play	5-block tower	Uses 50 words, two-word sentences	Asks for food and is toilet trained
24 mo	Walks up and down steps without help	Imitates stroke with pencil, 7-block tower, turns pages one at a time, removes shoes, pants	Uses pronouns, follows 2-step commands	Parallel play
30 mo	Jumps with both feet off floor, throws ball overhead	Unbuttons, holds pencil in adult fashion, draws horizontal and vertical strokes	Uses pronouns appropriately, repeats two digits, understands concept of "1"	Tells first & last name when asked, gets self a drink

3 yr	Pedals tricycle, alternates feet going up steps	Copies a circle, undresses completely, dresses partially, dries hands if reminded	Three-word sentences; uses plurals and past tense, knows all pronouns, 250 words, understands concept of "2"	Plays in group, shares toys, knows full name, age, sex, takes turns
4 yr	Hops, skips, alternates feet going down steps	Copies a square, buttons clothing, dresses self completely, catches ball	Knows colors, asks questions, says song or poem from memory	Tells "tall tales," plays cooperatively with a group of children
5 yr	Jumps over obstacle, skips alternating feet	Copies a triangle, ties shoes, uses a knife to spread	Prints first name, asks what a word means	Plays competitive games, abides by rules, shows sexual curiosity, helps with household tasks

The values that children have learned from their parents begin to be tested by peers, who start to exert a stronger influence. Young teens are now more concerned about how their peers dress and behave. They start to experiment with their identity, trying out different ways of acting and seeing how people around them react to these various strategies. Young teens also begin to enjoy more freedom to make their own decisions and may receive less supervision. Because they have little experience with the consequences of their actions, early adolescence can be a time when risks are taken unknowingly. These young teens may not appreciate the potential impact of their actions.

Middle adolescents are portrayed most frequently in the media and thought of by most adults as the "typical teenager." In this stage, the physical changes continue. Middle adolescents begin to develop the capacity to think abstractly, but it will be several years before those habits of thought are firmly established.

Teenagers at this stage become extremely susceptible to the cultural messages they receive about appropriate body size and grooming. The focus on physical attractiveness is heightened by the huge effect of peers on one another during this stage of development. Parents and their beliefs may now be secondary to the norms and pressures—both positive and negative—of a teenager's peer group.

Risk-taking is often associated with middle adolescence. Adolescence is an appropriate time for trying new things and taking new risks—with positive and negative consequences. However, adolescents have often been portrayed as taking extreme, ill-considered risks.

Teens in late adolescence start to take on adult roles and responsibilities. The physical changes of adolescence are complete. At this stage, family influence comes into balance with messages from peers. Most older adolescents have developed a sense of identity and a sense of both their similarities and their differences from parents. Late adolescents are firmly rooted in abstract thinking. They are thinking about the future and functioning cognitively, as adults.

THE SENSE ORGANS

[Refer to Chapter 3 Personal Health]

Growth and Development also includes the over-all wellbeing of the systems of the body. The following sections briefly outline the functions of the body systems and focus on the common problems as well as ways to keep the body systems healthy.

THE DIGESTIVE SYSTEM

The digestive process begins in the mouth. Food is partly broken down by the process of chewing and by the chemical action of salivary enzymes (these enzymes are produced by the salivary glands and break down starches into smaller molecules).

After being chewed and swallowed, the food enters the esophagus. The esophagus is a long tube that runs from the mouth to the stomach. It uses rhythmic, wave-like muscle movements (called peristalsis) to force food from the throat into the stomach. This muscle movement gives us the ability to eat or drink even when we're upside-down.

The stomach is a large, sack-like organ that churns the food and bathes it in very strong gastric acid. Food in the stomach that is partly digested and mixed with stomach acids is called chyme.

After being in the stomach, food enters the duodenum, the first part of the

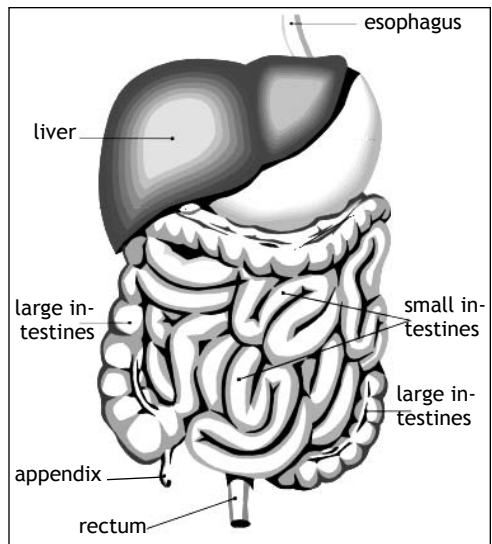


Figure 1. The digestive system

small intestine. It then enters the jejunum and then the ileum (the final part of the small intestine). In the small intestine, bile (produced in the liver and stored in the gall bladder), pancreatic enzymes and other digestive enzymes produced by the inner wall of the small intestine help in the breakdown of food.

After passing through the small intestine, food passes into the large intestine. In the large intestine, some of the water and electrolytes (chemicals like sodium) are removed from the food. Many microbes (bacteria) in the large intestine help in the digestion process. The first part of the large intestine is called the cecum (the appendix is connected to the cecum). Food then travels upward in the ascending colon. The food travels across the abdomen in the transverse colon, goes back down the other side of the body in the descending colon, and then through the sigmoid colon.

Solid waste is then stored in the rectum until it is excreted via the anus.

Common problems of the digestive system

Obesity. Obesity is excessive weight gain resulting from overeating. This is seen in children usually between 7-11 years and during adolescence. It may also occur in adulthood mostly during middle age. There are several other causes of obesity, such as genetics, social factors and some psychological factors. Obesity strains the heart and the lungs. Over time during adulthood, it can cause problems like high blood pressure, coronary artery disease, and diabetes mellitus. The increased body mass can cause cumulative injury to weight bearing joints and even osteoarthritis, a problem of the joints.

Gastritis. Refers to the inflammation of the lining (gastric mucosa) of the stomach. It may come suddenly or it may be chronic. Causes include bacterial infection, especially by microorganisms called

Helicobacter pylori, anti-inflammatory drugs (including aspirin) and steroids. Other causes are intake of alcohol, irritating foods and even ingestion of corrosive alkalis or acids.

First aid for gastritis

- After symptoms subside, give tea or broth at frequent intervals.
- Add other food gradually; ingest bland food such as rice soup, cream soup, crackers and gelatin.

Peptic ulcer. Refers to a sore in the lining and the deeper structure of the stomach, duodenum and jejunum (small intestine). The sore may affect the muscle layers of these structures. Often it can cause bleeding because the blood vessels of the lining is injured. Where there is bleeding in the stomach, it can pass out as bloody stools. Blood in the stool should be referred to a doctor. Cigarette smoking and regular intake of aspirin are strongly associated with chronic peptic ulcer. Medical treatment should be sought

for peptic ulcer. It is directed towards relief of symptoms, healing of the ulcer, and prevention of complication recurrence.

Diarrhea. Acute diarrhea is often caused by viral infections commonly ingested through contaminated food or water or contact with contaminated hands. Diarrhea can also be due to bacterial and protozoal infections.

A common protozoal cause of diarrhea is amoebiasis. The offending organism is called

Entamoeba histolytica. The diarrhea in amoebiasis may be persistent, lasting from 1 to 4 weeks. It also comes with a crampy or vague abdominal pain. The person infected also feels fullness of the belly and passes gas frequently. Less frequently, the diarrhea can be associated with bloody stools. Once identified as the cause of the diarrhea, a specific antimicrobial medicine is needed. Sometimes, a person may harbor the organism inside the gut, but there are no symptoms felt. He/she is a carrier or “cyst passer” and can infect others unknowingly.

There are also other organisms, usually bacterial, that cause bloody diarrheas. When noted, immediate care or consultation with a health care provider is necessary. Examples are diarrheas caused by E coli, Shigella, Salmonella and Campylobacter.

Constipation. Most people have bowel movements regularly. The pattern varies among persons. Difficulty in expelling the stool can cause general discomfort and anxiety. Lack of dietary fiber and inadequate fluid intake lead to infrequent, dry stools. Dietary fiber increases the water content of the stool and bacterial degradation of the fiber enhances colon motility. When this happens, then the urge to move the bowels occurs and constipation is relieved.

Parasitism and Geo-Helminth Infestations. Because many Filipino communities still lack a clean water source and have no appropriate sanitation facilities, parasitism and geo-helminth infestations remain highly prevalent in the country. The most common infestations are listed below:

- *Ascariasis and Trichuriasis.* *Ascaris lumbricoides* and *Trichuris trichuria* are the most common round worm infestations in the country.

To prevent and control diarrhea:

- Drink water from safe sources. (If unsure, boil drinking water.)
- Eat well-cooked and properly prepared food (avoid eating improperly prepared raw food).
- Keep food on the table properly covered.
- Choose street food with extra care.
- Wash fruits and vegetables adequately before eating or cooking.
- Wash hands with soap and water after using the toilet and most especially before eating.
- Wash hands before preparing food.

Co-infection is usual. Typical symptoms are colicky pain in the belly and the sensation of fullness. Massive infestations can cause obstruction of the small intestine and malnutrition. The eggs of the worms can be identified through the analysis of the stool and appropriate medicines can clear the infestation. Proper waste disposal and sanitation as well as hygiene practices like handwashing are very important to prevent infection and/or re-infestation.

- ❑ *Hook Worm Infestation.* In the Philippines, *Necator americanus* is the most common type of hook worm that infests humans. The parasite gains entry into the body by penetrating the skin of the feet that are exposed to soil where the larvae live. This causes a stinging or burning sensation followed by itchiness at the area of penetration. Hook worm larvae, developing from eggs deposited in human stool, can live in the soil for many weeks. An important preventive measure, therefore, is the avoidance of walking and playing barefooted by wearing footwear like slippers, sandals or shoes. Proper use of toilet facilities is also necessary so that soil does not get contaminated with the parasite. Chronic infection can lead to anemia and even edema.
- ❑ *Capillariasis* is an intestinal parasitism caused by smallest nematodes that infect humans called *Capillaria philippinensis* especially in northwestern Luzon. The worms can be seen in the small intestine of humans. The disease can be acquired through consumption of infected raw or improperly cooked small freshwater fish. After eating infected fish, it takes at least about two weeks for the eggs to mature. Signs and symptoms of Capillariasis are abdominal pain, chronic diarrhea for more than two weeks, loss of appetite, weight loss, vomiting, and swelling of the body and loss of muscle mass.

Keeping the digestive system healthy

Maintenance of adequate nutrition and elimination requires a functioning digestive system or gastrointestinal tract. Before the body can use nutrients, they must be broken down into simpler forms to be absorbed by the blood stream. Abnormalities that interfere with passage of food will interfere with nutrition.

Health tips

- Brush and floss teeth regularly.
- Keep teeth and gums healthy.
- Eat a variety of food.
- Take small amounts of food at a time.
- Do not hurry; Chew well.
- Take adequate fluid after every meal.
- Relax when eating.

- Avoid very oily food.
- Healthy circulation (blood and oxygen) maximizes absorption.
- Avoid cholesterol-rich food to prevent high blood pressure.
- Refrain from excessive intake of alcohol.
- Do not take medication without doctor's advice.
- Keep lungs and heart healthy to ensure that blood vessels efficiently carry nutrients to tissue cells in the whole body.
- Eat a lot of fiber (fruits & vegetables) for roughage to prevent constipation and to promote regular bowel movement.
- Avoid eating raw fish. Cook fish thoroughly before eating.
- Use sanitary toilet for disposal of human waste.

When sick, immediately consult the doctor or the Barangay Health Center for proper treatment and medicine prescription.

THE MUSCULO-SKELETAL SYSTEM

Bones are divided into four types according to their shape: long bones, such as the femur (thighs) and humerus (arms); short bones, such as the carpals (hands and fingers); flat bones, such as the skull; and irregular bones, such as the vertebrae (backbone). The bone structures are covered with a tough membrane called periosteum that contains cells that form new bone during growth and repair.

The skeletal framework provides support for body tissues. Thus, the individual can stand erect. Bones protect the tissues and internal organs e.g. the skull protects the brain, the ribs protect the heart and lungs. Bones help in movement and coordination of muscles and joints. Bones provide storage areas for minerals (calcium, phosphorus) and marrow for the formation of blood cells.

Muscles that pull on the bones constitute the main organ of movement. Smooth muscles, like those in the stomach and cardiac muscles (in the heart) move involuntarily. Skeletal

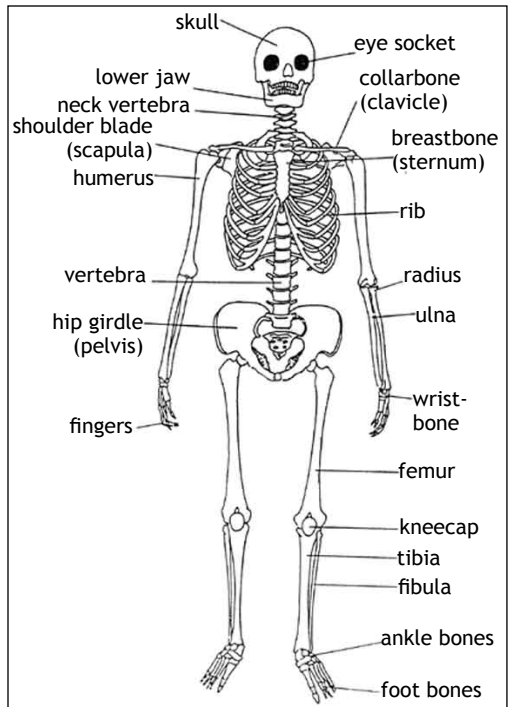


Figure 2. The musculo-skeletal system

or striated muscles move voluntarily. Skeletal muscles, which make up 40 percent of the body weight, provide controlled movement, maintain posture and produce body heat.

Ligaments are strong, dense, flexible bands of connective tissue that join bones to one another. They add strength and stability to a joint by encircling it. Ligaments allow movement in some directions and restrict movements in others.

Tendons are strong, dense bands of connective tissue at the end of muscles. They attach muscles to the periosteum, the fibrous membrane that covers the bone. Tendons enable bones to move when skeletal muscles contract.

Cartilages are supporting tissues found at the end of the bones. They form a cap over the ends of bones to protect and support the bone during weight-bearing activities.

Efficient muscle contraction is dependent on an adequate blood supply to and from the muscle fibers. Waste products resulting from the chemical change during muscle contractions are transported to the liver for synthesis. When waste products are not adequately carried off, muscle fatigue and pain result. Oxygen must be transported to the muscle fiber to support the work muscle contraction. Poor muscle work occurs when the oxygen supply to the muscle is inadequate. In anemia, for example, the amount of oxygen-carrying hemoglobin in red blood cells is reduced, so that circulation to the muscle is less, hence the feeling of the fatigue and body weakness.

Adequate circulation of blood to the bones is necessary to supply oxygen and nutrients. Blood is supplied through blood vessels that travel within and around the bones. If there is damage to an artery, then the blood supply, and therefore nutrition, is interrupted. Furthermore, bones are supplied with nerve endings that connect with the central nervous system. Thus, pain will result if a bone is injured.

Common problems of the musculo-skeletal system

Fractures. Fractures usually occur as a result of a blow to the body or a fall or other accidents. A fracture may also occur even during normal activity or after a minimal injury. If the bone has been weakened by disease like cancer or osteoporosis, the bones may collapse. Older persons are at a higher risk for fractures. Signs and symptoms of a fracture vary according to the location and function of the involved bone. Pain results because of swelling and muscle injury. The patient loses function and motion, as well as sensation in the affected area, and even in the area far from the injury as a result of nerve damage. Some deformity may result from loss of bone continuity. The affected area will be warm because of the increased flow of blood to the area.

When an accident occurs, ask the following questions to determine the gravity of the situation. Is the patient breathing or not? Is the patient conscious or not? Is there a pulse? Injuries from falls or sports activities do not usually make the victim unconscious unless the impact is severe. The injured person temporarily gets dazed. The person responding to the accident should remain calm, a demeanor which could also help calm the victim. [Also refer to Chapter 7 Safety and First Aid]

Injuries that involve the spine or the back of the neck area (gulugod). Along these areas are nerves that control vital body function and mobility. Injury to these areas can produce body paralysis. Utmost care must be given during the immediate phase of the injury. Keep the injured immobilized. Do not flex the neck area. Maintain the body alignment. If the injured is conscious, evaluate the presence of sensation of the extremities (hands, legs). Seek medical help at once when the injured is unconscious.

Muscle injuries. Overuse of muscles like in strenuous exercise or in competitive sports can cause muscle strain, which is an injury to a muscle due to excessive tension, effort or use. Back strains are most common as people often exert too much effort in carrying or moving heavy objects.

A muscle cramp is a strong, uncontrolled contraction of the muscle, which may result from poor blood circulation, extremely strenuous exercise, or some imbalance of certain minerals like potassium. Massage the affected area and exercise gently.

The most common site of ligament damage is the knee, often as a result of a sports injury. Trauma to ligaments and tendons is usually seen in connection with injury to a joint caused by a blow, by twisting or by stretching. The patient may suffer from temporary disability and may not be able to move freely. There may be abnormal motion of the joint. Pain and swelling also occur because of the partial or complete tear of the ligaments or tendons.

Injury to joints and joint structures may occur as a sprain (tearing of the ligaments surrounding a joint) or joint dislocation. Sprains are almost always the result of twisting injuries. Dislocation of a joint occurs as a result of excessive stress being applied to the joint or forcing it into an abnormal direction. Many of these injuries occur from running or contact sports.

Wounds. A wound is damage to the skin and tissues (also know as scraping of the skin). In an abrasion, only the skin area is affected. Some bleeding may occur. Abrasion (*gasgas*) often affects the knee area or the palms of the hands. Infection may set in because of the dirt that is embedded in the skin. Some pain occurs because of the damage nerve endings.

A laceration (*sugat* or *hiwa*) is an injury to the skin and the soft tissue underneath it, usually caused by cuts or by hitting something with a sharp edge. Lacerations can happen anywhere on the body. The healing time for a laceration depends on where it is on the body. It may take a laceration longer to heal if it is over a joint, such as the knee or elbow. Lacerations can be many shapes and sizes. The opening in the skin may look like a cut, tear or gash. The wound may hurt, bleed, bruise or swell. Lacerations in certain areas of the body, such as the scalp, may bleed a lot. The wound may have edges that are close together or gaping apart. There may be numbness around the wound.

A puncture wound is caused by an object piercing the skin and creating a small hole. Some punctures are just on the surface. Others can be very deep, depending on the source and cause. A puncture wound does not usually result in excessive bleeding. Usually, these wounds close fairly quickly on their own. Treatment may be necessary to prevent infection. A puncture wound from a cause such as stepping on a nail can become infected because the object that caused the wound may carry bacteria or spores of tetanus into the skin and tissue.

Keeping the musculo-skeletal system healthy

Nutrition, exercise, gender and the genetic make-up of a person are factors that affect the quality of the muscle tone and strength.

While the goal is to maintain healthy muscles, injury from muscle tears and sprains bring serious problems to the person. Prevention of injury of the muscle is therefore very important.

Maintain muscular strength and flexibility through proper exercise and by avoiding too much stress on the muscles. Exercise ensures good muscle tone. Exercise hands by closing and opening them; bend and extend wrists without discomfort.

It is important that utmost care be observed so that the freely movable joints assume movements according to their limit of function to prevent muscle injury. This advice is particularly relevant for young people when they engage in strenuous physical stretching activities during sport training such as running or jumping.

Weight-bearing activities and movement, like walking, help keep cartilages healthy. Walking makes good use of the large muscles, bones and joints. Because it is both a physical and mental activity, it promotes a feeling of well-being for all ages, reduces stress, as well as lowers the risk of heart disease, diabetes, high blood pressure and osteoporosis.

In case of a pulled muscle, pain medication is usually prescribed. Apply a cold compress to the sprained area during the first 24 hours. It is also important to allow the affected muscle and tendon to rest for at least three days. Elevating the affected part can also help reduce swelling and relieve pain. Apply a warm compress to the affected area on the second day until the swelling subsides.

When a sprain occurs, the ligaments and the capsule surrounding the joint are partially torn, producing inflammation and swelling, and at times bleeding, around the site. Cold reduces pain. Rest the affected part for 3-4 days or until the swelling disappears. The area can be supported by an elastic bandage to reduce swelling. Elevating the affected part can also help reduce swelling and relieve pain. Apply a warm compress to the affected area on the second day until the swelling subsides.

To manage an abrasion, keep the wound clean. Wash the wound with clean water and soap. Remove dirt carefully. Rinse well. Dry with clean cotton or clean soft cloth. Tincture of iodine or Betadine solution may be applied, when available. Superficial loose dressing may be applied to prevent contamination. Otherwise, if the area is small, simply keep it clean until it heals.

It is important that if the skin is punctured, check to see that nothing is left in the wound. Also check to see if the object that caused the wound is intact. If a piece is missing, it may be stuck in the wound. Allow the wound to bleed freely, but if bleeding is heavy or squirting out, apply pressure until it stops. If bleeding won't stop, go to the nearest hospital for emergency care.

To prevent fractures and other injuries to bone and muscle, make the environment safer. Attend to safety precautions when climbing ladders using power tools or heavy equipment. Observe all safety rules in all activities like wearing a seatbelt, not drinking and driving, wearing protective clothing when necessary. Avoid situations that result in twisting and severe stretching of ligaments and tendons. Some exercises may do more harm than good. Have a qualified fitness instructor provide an exercise regimen that is safe. Rest tired muscles, and avoid heavy lifting. Women in particular should also be more conscious of the causes of osteoporosis – diets low in calcium, smoking, excessive coffee intake and a sedentary lifestyle.

THE REPRODUCTIVE SYSTEM

Sexuality education must be given in a factual and accurate manner so that the pupils will develop correct knowledge about sexuality. The presentation of the human reproductive system and the process of reproduction should be made using simple language that can be easily understood by the pupils. Encourage the use of proper terminology for the different parts of the

reproductive system, especially the external genitalia to dispel malice among the pupils. Avoid the use of figurative terms like “bird” and “flowers” for the male and female genitalia respectively. Children catch the attitude that adults project. When adults use the correct terms without embarrassment, children will tend to follow.

As sexuality education is affected by culture and religion, local beliefs, customs and traditions should be kept in mind when teaching to avoid negative feelings like guilt, anxiety and confusion.

Be careful in the use of terminology like sex education and sexuality education. The word *sex* is usually linked with the actual act of intercourse so that people sometimes connect sex education with sexual physical activity. *Sexuality*, however, has a much broader meaning. It refers to the totality of being a person. It includes all those aspects of the human being that relate specifically to being a boy or a girl, a man or a woman.

Furthermore, there should be equal attention given to female and male systems. More than just discussing the anatomies of the reproductive systems of both sexes in an academic manner, it is also important to discuss the changes in their bodies.

Pubertal changes

The onset of puberty in girls is easily identified by the start of menstruation usually at age 11 to 13 years. The onset of puberty in boys is less obvious. They may begin to have nocturnal emissions, which is an involuntary ejaculation of semen from the penis usually occurring at night.

Puberty is also characterized by a sudden growth spurt in children. Girls tend to have their growth spurts between nine and 10 years old, while boys have theirs at around 11-14 years old. Both sexes will have physical changes, also called secondary sex characteristics (see Table 3).

The female reproductive system

The menstrual cycle. Menarche (first menstruation) marks the beginning of

Table 3. Secondary sex characteristics.

Girls	Boys
<ul style="list-style-type: none"> • Hips become broader. • Breasts show enlarged nipples and areola become darker in color. • Pubic hair begins to appear. • Axillary hairs become noticeable. • Body hair becomes darker, coarser and is especially evident on the legs. 	<ul style="list-style-type: none"> • Testes and penis begin to enlarge. • Pubic hair begins to appear. • Shoulder and chest become broader. • Voice changes become noticeable. • Axillary and facial hair appear

the active functioning of the female internal reproductive organs—ovary, fallopian tubes and uterus. These internal organs depend heavily on the stimulating hormones produced by the brain. The onset of menarche usually occurs between 10 and 13 years old. General good health and good nutritional status affect the onset of menarche. Sickly or malnourished girls may have a delayed onset of the menses.

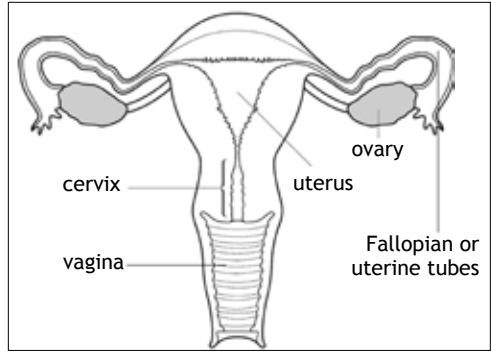


Figure 3. The female reproductive system (uterus)

The menstrual cycle begins with the first day of the menstrual period, which could last for an average of three to five days. At this stage the level of gonadotropin hormones is at its lowest, which will trigger a signal in the brain to begin the secretion of the gonadotropin releasing hormone. This hormone stimulates the anterior pituitary gland to secrete the follicle stimulating hormone (FSH). The FSH will stimulate the maturity of follicles for the formation of a young egg cell. While the follicle is maturing, estrogen is being secreted. Estrogen stimulates the uterus to thicken its inner lining.

When the estrogen level is high, the cervix is stimulated to replace the thick mucus plug in the cervical canal with a thin mucus discharge. This thin mucus discharge gives the female the feeling of wetness. This is considered one of the signs that the female will ovulate soon and marks the beginning of the period of fertility of this cycle.

When estrogen level is at its peak, the anterior pituitary will release the luteinizing hormone which will trigger the rupture of the mature follicle and release the egg. This process is called ovulation. The remaining empty follicle is filled with lutein which is high in progesterone. The high concentration of progesterone causes the basal body temperature to rise. This is another sign that the female has ovulated. This slight increase in basal body temperature remains until about a day or two before the next menstruation when the level of progesterone has gone down. The presence of progesterone will cause the cervical mucus to thicken and the female gets the feeling of dryness, a signal that the period of fertility for this cycle has ended.

When no fertilization has occurred, the follicle filled with lutein will shrink. Hence estrogen and progesterone levels decline. The inner lining of the uterus then begins to shed off as another menstrual flow. Thus, the day following the next menstrual flow marks the end of a menstrual cycle. The onset

of the menstrual period is the physical sign that a new cycle had begun.

External organs

1. External genitalia – external sex organ
 - ❑ Vaginal opening – external opening of the vagina
 - ❑ Urethral opening – external opening of the urethra
 - ❑ Clitoris – similar to the male penis but greatly reduced in size
 - ❑ Labia majora – lip-like structures comprised mostly of skin and adipose tissue, which extend on either side of the vulva
 - ❑ Labia minora – two soft folds of skin between the labia majora and to either side of the opening of the vagina
 - ❑ Hymen – a fold of mucous membrane which surrounds or partially covers the external vaginal opening
2. Breast – produces milk for the nourishment for the young
 - ❑ Nipple – tip of the breast; contains the opening of the milk tubes of the breast
 - ❑ Areola – pink or dark colored circular area around the nipple

Internal organs

1. Vagina – forms parts of the birth canal and is the female organ of copulation
2. Uterus – also called the womb; hollow muscular organ which is the site of menstruation, implantation and development of the fetus.
3. Fallopian tubes (2) – ducts that transport egg cells (ova) from the ovary to the uterus
4. Ovaries (2) – produce the egg cells and secrete hormones (progesterone and estrogen)

Care for the genitalia

Always wash from front to back. Use soap and clean water. Do not use a towel to clean the genitalia; this might cause irritation. Change underwear daily. During menstruation, take a bath everyday. Change sanitary napkins every couple of hours. When using pantyliners towards the end of the period, change more often, even when it “looks clean.” Not changing may cause infections, as these are storehouses for bacteria.

The male reproductive system

External organs

1. Penis – male organ of copulation
2. Scrotum – sac/ pouch supporting the testes

Internal organs

1. Testes (2) – produce sperm cells
2. Ducts of testes – transport and store sperm cells

- a. Epididymis – a comma-shaped organ that lies along the posterior border of each testis; site of sperm maturation
- b. Vas deferens/ seminal duct (2) – duct that ascends along the posterior border of each epididymis; penetrates the inguinal canal and enters the pelvic cavity; stores the sperm and transports them from the epididymis to the urethra.

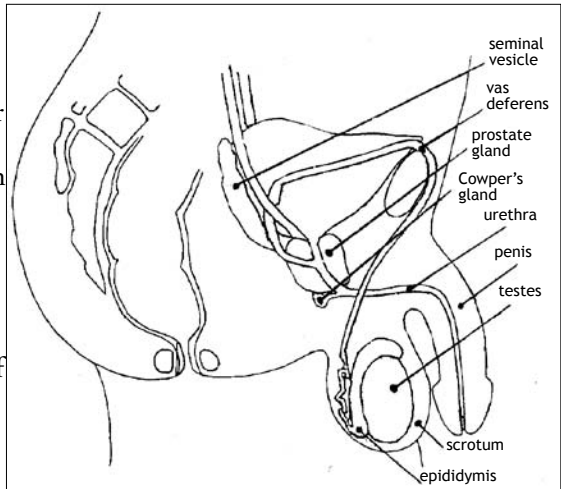


Figure 4. The male reproductive system

3. Seminal vesicles – secrete a component of semen into the ejaculatory ducts
4. Prostate gland – a muscular body located at the base of the male urethra that secretes an alkaline fluid, which forms part of the ejaculatory fluid
5. Bulbourethral gland (Cowper's gland)- secretes an alkaline fluid, believed to protect the sperm from vaginal acidity, into the urethra
6. Urethra- tube through which semen and urine leaves the body

Care for the genitalia

Change underwear daily. Use soap and clean water. Do not use a towel to clean the genitalia; this might cause irritation. For uncircumcised males, pull the foreskin back and wash the inside as well as the outside of the glans of the penis.

Process of fertilization in human beings

When a man and a woman want to make a baby, they position their bodies very close together. When they are close, the man's penis becomes hard and is inserted into the woman's vagina. This is called sexual intercourse (copulation or coitus). Then a fluid called semen comes out of the man's penis (ejaculation). The semen has millions of sperm cells in it. When one sperm cell meets with the woman's egg cell (ovum), the egg becomes fertilized.

Fertilization occurs in the outer third of one of the fallopian tubes. It takes place within hours following sexual intercourse. Approximately 300 million sperm cells are released into a female's vagina during intercourse. Once the sperm cells meet the ovum, they begin to dissolve the ovum's outer layer. However, only one of these sperm cells can actually fertilize the single

female egg cell. The successful sperm cell must enter the uterus and swim up the fallopian tube to meet the egg cell. There it passes through the thick coating surrounding the egg.

The zygote or fertilized egg cell spends the next few days traveling down the fallopian tube. Meanwhile it divides several times accompanied by the formation of a small cavity between the cells. This stage is called a blastocyst. Up to this point there is no growth in the overall size of the embryo, so each division produces successively smaller cells. By the eighth day, the zygote reaches the uterine cavity and implants on the inner lining of the uterus (endometrium). This process is also called implantation. The inner cell mass forms the embryo, while the outer cell layers form the membranes and placenta.

Common sexually transmitted infections

Sexually Transmitted Infections (STIs) are usually called by lay people as *sakit sa babae*. This term however is not correct because STIs can infect both males and females. Boys can get the sexually transmitted infection just as much as girls. Some of the common STIs are Gonorrhoea, Syphilis, Human Immunodeficiency Virus/ Acquired Immunodeficiency Syndrome (HIV/AIDS) and Hepatitis B.

These diseases have different causative agents but what is common among them is that they can be acquired through sexual contact. HIV/AIDS, Hepatitis B and syphilis can also be acquired through non-sexual means like transfusion of contaminated blood, an injection or pin prick with an infected/contaminated needle, or a cut from an infected razor or nipper. It can also be introduced into the body through small cuts in the skin and absorption of infection serum or plasma, semen and vaginal secretion through mucosal surface like the eyes, mouth or vagina. HIV/AIDS and syphilis may infect a fetus through placental transmission. The baby may also get infected through the milk of an HIV/AIDS positive mother.

[Also refer to Chapter 5 Prevention of diseases]

THE RESPIRATORY SYSTEM

Air passes through the nose into the pharynx, larynx and trachea until it reaches the lungs. The nasal cavities are lined by mucus membranes covered with hair that filters and humidifies the air passing through it. As air enters the nasal cavities, it is filtered, warmed and humidified. When air reaches the trachea or windpipe, it is dust free and 100 percent humidified.

The windpipe branches into two main bronchi that pass to the corresponding lung, branching into smaller tubes called the bronchioles. Each

bronchiole ends in air sacs called alveoli which are in close contact with capillaries where the interchange of gasses occurs.

The air passages and lungs are concerned with external respiration—the absorption of oxygen from the air and into the blood.

Internal respiration is the function of the circulatory system whereby oxygen is transferred from the blood to the tissues of the body. Arteries are thick-walled tubes which convey blood from the heart to the capillaries. Capillaries receive blood from smaller arteries and deliver it into smaller veins, which then allow blood to flow to the heart.

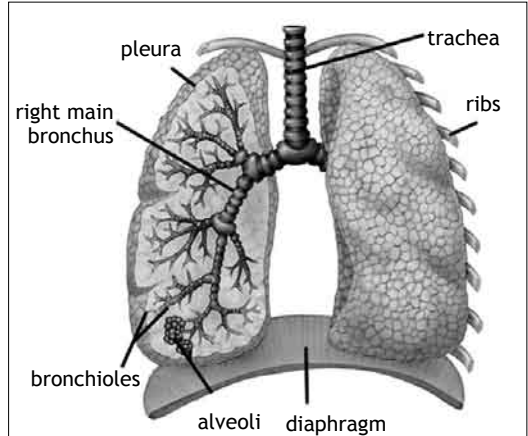


Figure 5. The respiratory system (lungs)

Common respiratory problems

Common respiratory problems among children are the common cold, allergic rhinitis, sore throat, primary complex (tuberculosis) and asthma. These have been known to occur because of poor nutritional status, incomplete immunization, poor ventilation and sanitation at home and poor supervision of parents. Younger children who are undernourished are much more prone to developing respiratory illnesses since their bodies are not strong enough to fight the germs that cause the infection.

Primary complex or tuberculosis. Tuberculosis is a disease caused by the bacteria *Mycobacterium tuberculosis*. It mainly infects the lungs, although it can affect other organs as well such as the liver, bones, heart, kidneys, brain. When someone with untreated TB coughs or sneezes, the air is filled with droplets containing the bacteria. Inhaling these infected droplets is the usual way a person gets TB.

Allergic rhinitis. This is due to heightened sensitivity to allergens such as pollen or dust, manifested as nonproductive cough, hoarseness of voice, mouth breathing, itchy eyes, excessive tears and enlargement of the tonsils and adenoids. Sometimes, allergic rhinitis happens only during the first few hours after waking because dust settling in the room is inhaled.

Sore throat. The most common cause of sore throat is the streptococcus organism. Sore throat can be due to tonsillitis (inflammation of the ton-

sils), pharyngitis (inflammation of the pharynx) or scarlet fever. The onset of streptococcus infection is sudden, manifested by fever, abdominal pain, vomiting, headache and chills. When rashes appear on the arms, legs and groin, and the tongue and membranes inside the mouth turn red, suspect scarlet fever.

Asthma. Asthma is a form of respiratory allergy. An acute asthma attack can be very difficult to handle especially if the child or parent is not ready for the emergency. Asthma attacks affect the child's sleep, play, activity, and schooling. During an asthma attack, the air passages become narrow such that less air can get in and out of the lungs. The chest feels tight, and cough and wheezing appear. The attack may last until the cause is removed or even beyond. The attack can be triggered by house dust, furry animals, cigarette smoke, pollens from trees and flowers, strong smells/sprays, extreme changes in weather, and presence of common cold or strenuous exercise.

Severe acute respiratory syndrome is a viral respiratory illness caused by a recently discovered virus called SARS-associated coronavirus (SARS-CoV). SARS was first reported in Asia in February 2003. In general, SARS begins with a high fever (temperature greater than 38.0°C). Other symptoms may include headache, an overall feeling of discomfort and body aches. Some people also have mild respiratory symptoms at the outset. About 10 to 20 percent of patients have diarrhea. After two to seven days, SARS patients may develop a dry cough and have difficulty breathing, which eventually lead to pneumonia.

The main way that SARS seems to spread is by close person-to-person contact and through droplet secretion (i.e., viruses from an infected person that are coughed out and then inhaled by another person. Close contact means having cared for or lived with someone with SARS or having direct contact with respiratory secretions or body fluids of a patient with SARS. Examples of close contact include kissing or hugging, sharing eating or drinking utensils, talking to someone within three feet and touching someone directly. Close contact does not include activities like walking by a person or briefly sitting across a waiting room or office.

The control of SARS in 2003 is an example of how the global community can cooperate in handling new and emerging infections that have serious effect on the health of the general public.

The common cold. Common colds are caused by viruses, which are self-limiting. The symptoms will disappear after several days. The problem is that other respiratory complications can develop given other conditions. When the virus invades the upper airways, it weakens the defense of the local site of invasion so that bacterial infection can also occur.

Influenza or flu refers to a viral illness caused by any of the types of influenza virus. Its presentation may vary from a mild illness with fever, colds, cough, fatigue and muscle aches to severe respiratory symptoms. These virus infections are usually self-limiting, meaning you can get well in three to four days with proper rest, increased fluid intake, and vitamin C. It **DOES NOT** need antibiotics, which is only used for bacterial infections.

Care of the respiratory system

Older children are likely to be more responsible for their own health. They are more capable of organizing an altered state of health and able to communicate this to parents or other responsible adults. Older children also have increased resistance against infections so that the illness experience may not be as severe as it is for younger ones.

Poor sanitation may indicate the presence of allergens such as dust mites and pet hair and droppings, which can cause respiratory allergies such as colds, sinusitis and asthma. Clean the house regularly to remove potential allergens. Also stay away from people who are already sick with respiratory diseases like coughs and colds. If allergies persist, consult a physician for proper management and treatment.

Poor ventilation in the house or school, whether due to poor construction or overcrowding, means lack of fresh air and the possibility of sharing air-borne infections among family members or classmates. Lack of proper clothes during cold, rainy or extremely hot weather can also lower body resistance.

To relieve a clogged nose, let the child inhale vapors from steaming hot (not boiling) water (put a pinch of salt) or newly cooked rice. If the cold does not improve within seven days and other signs and symptoms are observed, the child should be brought to a nearby health center for further diagnosis. Doctors might prescribe oral antibiotics. Never give or take antibiotics without a doctor's order since there are many kinds of infections and specific antibiotics are required to treat them.

For streptococcal infection such as sore throat, consult a doctor. It can never be emphasized enough—do not give medication without a doctor's prescription. Supportive treatment of symptoms to give comfort and prevent complication may also be provided. However, be conscious that supportive treatment is not enough to cure an infection. Supportive treatment includes giving the patient a tepid sponge bath and warm drinks. It is important that complication is prevented since the infection can lead to rheumatic heart fever and rheumatic heart disease. Observe whether the child is improving or getting worse. Return to the physician if symptoms do not improve, even after medication.

There is no cure for asthma but control is possible and can work wonders. The first step is to identify and keep away from known causal factors. The house/ environment must be kept clean and free from furry pets, pollens and strong smells. The child must be protected from very cold weather or have certain precautions against catching the common cold. The child must be cautioned that strenuous exercise for physical activity might trigger asthma attack.

Children should be immunized against tuberculosis early. The severity of active TB during childhood warrants special efforts to protect children, particularly those below five years old. Children get infected with TB by adults who have TB. BCG vaccination contributes to the prevention and control of TB in situations where there is high risk of infection and when other public health measures cannot be implemented.

Primary tuberculosis is rarely contagious because of the small number of bacteria present. However, there is a lifelong risk of getting the disease. It is associated with general health, nutritional state and other diseases. Children should be kept healthy and given nutritious food to fight tuberculosis and other illnesses.

THE URINARY SYSTEM

The kidneys are a pair of bean-shaped structures found at the lower back.

They keep the composition of the blood constant by eliminating excess substances and harmful substances e.g. excess water or water as end-products of protein metabolism, excess salts such as sodium chloride, potassium and calcium, end-products of protein metabolism such as urea and uric acid, drugs,

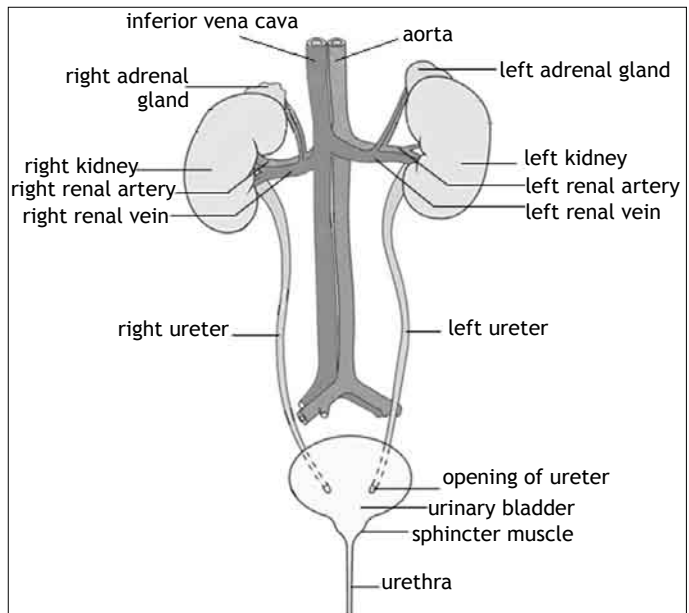


Figure 6. The urinary system

toxins and other harmful chemical substances.

All these are accomplished during the formation of urine. During filtration, water, salts and other substances are filtered from the blood in the kidneys. In the secretion phase, substances that have exceeded their normal value are passed into the tubules. Some of these substances are reabsorbed into the blood stream during the process of absorption.

Common urinary problems

Enuresis. Enuresis is the involuntary passing of urine. Day enuresis, involuntary passing of urine during the day, is common among young children since they may not yet have developed bladder control. School children can have enuresis. This is sometimes associated with adjustment problems, behavioral disorders or structural lesions in the urinary system. Making the child urinate before going to sleep has helped some. Limiting fluids before going to bed has also been effective for others. Children who have severe cases of enuresis sometimes need psychological intervention and it may take some time and effort before the problem is resolved. This problem should be discussed with the parents so that correct medical intervention can be taken.

Nephritis. Nephritis refers to inflammation of one or both kidneys. It can be caused by infection, but is most commonly caused by autoimmune disorders that affect the major organs. For example, those with lupus are at a much higher risk for developing nephritis. In the Philippines, nephritis quite commonly follows a throat infection that is caused by a bacteria called *Streptococcus pyogenes*. (It must be pointed out, however, that majority of throat infections are caused by viruses; these throat infections do not require treatment with antibiotics). As the kidneys inflame, some protein may be lost from the blood into the urine and this can be life-threatening. Nephritis causes additional problems like water retention and hypertension, as the kidneys cannot function properly to rid the body of water. Water retention or edema, can cause swelling of the feet, ankles, legs and hands.

Urinary tract infection. A urinary tract infection may be a problem anywhere in the structure of the urinary system—kidneys, ureters, bladders or urethra. If this problem is not resolved immediately, it can continue to develop until it becomes a chronic progressive renal disease.

Women tend to get them more often because their urethra is shorter; has a straight track; and, closer to the anal opening. In men, the urethra is longer; more tortuous; and, away from the anal opening.

Children may sometimes be suffering from urinary tract infection without knowing it. This may be due to the child's inability to localize pain or failure to report discomfort when urinating. This may be dangerous since the infec-

tion as well as its source can damage the kidneys. What is important is for children to be taught to report vague uneasiness when urinating or when there is unexplained fever, low back pain or sometimes vomiting. Children should also be encouraged to drink plenty of water to help the kidneys remove harmful substances from the body. Children should also be taught to give particular attention to cleaning their private parts and to not hold back their urine if they feel the urge to urinate.

People with diabetes can also be predisposed to UTI. Improper hygiene related to changing of diapers and in cleaning the area of the genitalia and the anal opening can also predispose one to the infection. Among uncircumcised adult males, the foreskin should be retracted and the glans of the penis cleaned when taking a bath. This minimizes the chance of infection. Among women, the genital or perineal area, should always be washed from the front to the back in a single motion. This also reduces the chance of infection.

Important signs and symptoms that must be remembered.

- Disturbances of urination such as dribbling or minimal dripping of urine, involuntary control, straining or forcing urine to pass or infrequent urination
- Abdominal or back pain that is not related to any other disorder
- Abnormal urinalysis findings: presence of 10-15 white blood cells or blood in the urine
- Hypertension in the young
- Unexplained fever and malaise (tiredness or weakness) not associated with other possible health problems such as viral influenza

If a UTI is suspected, a urine sample is sent for urinalysis. Findings like the presence of nitrates, white blood cells, red blood cells and bacteria may indicate an infection. To be certain that an infection does exist, the urine sample should also be sent for culture and sensitivity studies. This test identifies the microorganism causing the infection and gives a listing of the appropriate antibiotics that can be used for treating the infection.

Care of the urinary system and prevention practices

Caring for the urinary system is simple. Clean the genitals at least twice a day (morning and evening) to prevent bacteria and viruses from entering the body.

Kidney disease prevention. The general preventive measures that keep us healthy and well, including the conscious decision to make healthy lifestyle choices, will also be very helpful in keeping the kidneys well.

- Eat lots of fruit and vegetables including legumes (peas or beans) and grain-based food like bread, pasta, noodles and rice.

- Eat some lean meat like chicken and fish each week.
- Limit salt intake as well as intake of fatty food.
- Drink plenty of water instead of sugary drinks.
- Maintain a healthy weight.
- Stay fit. Do at least 30 minutes of physical activity that increases heart rate on five or more days of the week including walking, bike riding, swimming or gentle aerobics.
- Don't smoke.
- Limit alcohol intake to two small drinks per day if male or one small drink per day if female.
- Have blood pressure checked regularly.
- Have activities that relax and reduce stress levels.

THE CARDIOVASCULAR SYSTEM

The heart needs its own supply of oxygen-rich blood. Blood receives its oxygen from the lungs and travels to your heart through the coronary arteries. The aorta is the large vessel that carries blood from the heart to the rest of the body.

The heart muscle squeezes blood through the four chambers—atria at the upper portion and ventricles at the lower portion. With each squeeze, the valves open to let blood through the next chamber. The heart beats at a certain speed or rate, measured in beats per minute, with a certain pattern known as the heart rhythm.

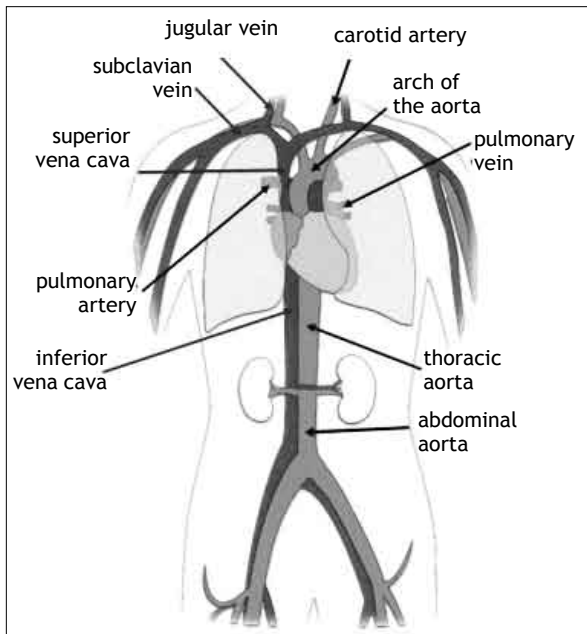


Figure 7. The cardiovascular system

Blood vessels like the carotid artery bring blood to the brain cells. The jugular is the large vein that returns blood from the brain to the heart and lungs. The renal artery and vein serve the kidneys. Blood circulation to the various systems of the body allows the specific body organs to work.

Common cardiovascular problems

Anemia. Anemia results when there is an abnormally low hemoglobin concentration and/or low red blood cell count. The most common cause of anemia is iron deficiency. Iron- deficiency anemia and other dietary deficiencies can cause reduced hemoglobin concentration and subsequent lower oxygen-carrying capacity of blood. The anemia pattern of paleness, fatigue, irritability and rapid heart rate develops. Chronic (prolonged) anemia can be caused by intestinal parasites (especially hookworm) or profuse menstruation. Health practices to prevent intestinal parasitism, such as proper washing hands before eating and after toilet use, are important especially among school age children.

Individual iron needs vary with age and situation and growth. For young girls, a large amount is usually needed to cover menstrual losses. The recommended daily allowance for men is about 10mg/day and about 15mg/day for women, especially during pregnancy and child-bearing years. Girls in early adolescence should be informed regarding the iron-rich food they should eat, since it is at this stage or age when many of them will start menstruation.

Hypertension. Elevated blood pressure or hypertension, defined as systolic pressure of greater than 120 and diastolic pressure of greater than 80, is an important condition that has to be monitored and managed. Chronic hypertension is associated with increased likelihood of heart disease, stroke and kidney problems. Control of hypertension significantly reduces the risk of getting these diseases.

If heart disease runs in the family:

- Exert effort to reduce the risk factors.
- Help children become aware of the known risk factors.

Checking of the blood pressure at every opportunity is helpful. However, before the BP is taken, an individual should be rested for at least five minutes. Proper techniques should also be observed. If the BP is elevated, the measurement should be repeated on two other occasions and if both readings are also elevated, a visit to a health care provider is highly advised. It is possible to have an elevated high blood pressure and yet not feel anything at all.

For children, the blood pressure can be taken as early as the third birthday. The definition of what is an elevated BP in children depends on their age.

It is important to remember also that the treatment of a high blood pressure involves many approaches. Sometimes, weight reduction, exercise and improved nutrition (i.e. less salt and fatty food in the diet) are all that is needed. However, for some, treatment with drugs may be necessary and may need to be maintained for a long time.

Risk factors for developing cardiovascular diseases

Smoking. Smoking is the major risk factor in developing cardiovascular disease. People who smoke a pack of cigarettes a day have more than twice the risk of a heart attack than people who never smoked. People who smoke are more likely to form blood clots faster than people who do not smoke. This situation increases the risks for stroke. Generally, the effects of smoking make the heart work harder and harder.

Cholesterol and Fat. Cholesterol is a fat-like substance produced in the liver and normally found in the body cells. It is also derived from certain food. Cholesterol is important to the body's functions, such as the integrity of cell membranes and hormones and the production of the vitamin D. When the normal level is maintained, then the body can function well.

Elevation of the cholesterol and fat in the blood is another condition associated with problems of the heart. Too much of low-density lipoproteins (LDL) can slowly build up in the walls of the arteries, thus blocking blood flow to the heart and brain. Together with other substances, it forms plaque, a hard deposit that can clog the arteries. If a clot blocks the flow of blood to a part of the brain, the result is a stroke. When the LDL level is high, the risk of heart disease is increased. Thus, LDL is often referred to as "bad cholesterol."

High-density lipoprotein (HDL) cholesterol is produced mostly in the liver, and is also released in the blood stream. Medical experts explain that HDL tends to carry cholesterol away from the arteries and back to the liver. HDL has been referred to as "good cholesterol" because it protects against heart attacks.

This problem is sometimes described as "familial;" it means it normally runs in the family.

New research shows that the processes that lead to the hardening of arteries in the body and in the heart start during childhood and adolescence. It is, therefore, very important to be aware of this problem so preventive measures like modification of one's diet can be initiated early on. Good nutrition, weight control and regular exercises are "investments" that can result in keeping ourselves healthy during adulthood. Lifestyle choices like the decision not to smoke are also very important.

Screening may be necessary for individuals with family history of high levels of cholesterol or fat in the blood, or those with parents or grandparents who, before the age of 50, had a stroke, heart attack or sudden death. Screening usually tests for cholesterol, triglycerides and lipoproteins. There are special instructions in doing this test so it is best to consult one's health

care provider before having the test done.

Diabetes. Diabetes is a condition characterized by continuous high levels of sugar in the blood. Diabetes increases the risk of developing cardiovascular disease. High levels of blood sugar may damage the inner lining of the blood vessels. This in turn enhances the build-up of cholesterol deposits in the arteries. Diabetes may also contribute to elevations in blood pressure and cholesterol.

Obesity. Being more than 20 to 30 percent over the ideal body weight places the person at risk for developing cardiovascular disease. It can contribute to the development of high blood pressure and high cholesterol. Additional weight also means additional workload on the heart.

Hypertension. When blood pressure is consistently high, it creates more strain on the arteries and makes the heart work harder. The severity of hypertension is a major determinant in the development of cardiovascular illnesses.

Physical inactivity. Lack of regular exercise has been associated with increased risk for developing cardiovascular disease. Regular exercise, on the other hand, helps to control weight, raise the level of HDL cholesterol, decrease blood pressure and reduce psychological stress.

Stress. Stress can be positive; this is called eustress. Negative stress, which often occurs, is sometimes called distress. Stressors can be everyday problems, hassles that occur day in and day out, having many things to do at once, misplaced things, dwindling finances, sickness in the family—the list goes on. For young people, the worry about how they look can be a stressor.

Major life changes – like a death in the family, parents leaving to work abroad, parents separating, serious illness requiring hospitalization, getting a failing grade in school, a disciplinary problem in school, a negative change in financial status and outstanding personal achievement (this can be a major life event, too) – can also be stressors. Changes that affect one's family or school life are stressors because they threaten one's sense of security or self-esteem.

Conditions in the immediate surroundings affect the level of stress each day. Community hassles, a noisy environment, crowded areas, dislocation from place of residence, pollution, problems of peace and order, disaster and catastrophes can cause inordinate amounts of stress as well.

Prolonged or severe stress can affect health. It can lower resistance to illness and can make some diseases harder to control.

Caring for the cardiovascular system

Do not smoke. People who do not smoke should not start. Those who are smoking should quit.

Reduce high cholesterol level. Know the common sources of fat in food eaten daily. Practice moderation in the intake of types of fat. Cut down on high fat food. Eat more fruits, vegetables, whole grains in place of fatty meats and bakery goods. Blood cholesterol levels should be checked starting the mid-20s.

Check for diabetes. Belonging to a family with a diabetic is a cue. A blood sugar level determination will help confirm this. People who are at high risk for diabetes should maintain a reasonable weight by practicing moderation in food intake. Skipping meals should be avoided as this would lead to bigger sized servings at the next meal. Avoid too much sugar, especially those hidden in cakes, ice cream and other sweets.

Weight watching and physical fitness. If a person weighs too much, the body stores more fat and cholesterol. This is the cumulative effect of risk factors—one small factor (weight) leads to others. To lose weight, reduce dietary fat intake. Stop counting calories and start counting fat e.g. one cup of fried rice has about 15 grams of fat, while a cup of plain white rice has just one gram of fat. Regular aerobic exercise like walking, biking or swimming will help burn calories. Exercise helps build cardiorespiratory endurance. The heart, blood vessels and lungs will be able to distribute nutrients and oxygen to the tissues and to remove wastes. Exercise also builds muscular strength and endurance, increases flexibility and balances body composition (amount of body fat compared to lean tissue).

Cut on salt. Too much salt in the diet can lead to high blood pressure. Most people acquire the preference for highly salty food during childhood, particularly in junk food and processed meats and other canned food. Children have to be taught about the harm of too much salt at an early age.

THE CENTRAL NERVOUS SYSTEM

The central nervous system (CNS) is an organized communication network for perception and coordination of the whole body. The CNS and the endocrine system share the delicate task of maintaining balance between bodily activities and responses to the environment.

The CNS is made up of a collection of neurons and their connections organized within the brain and the spinal cord. Communication channels or the peripheral nervous system located outside the CNS are made up of cranial nerves that carry impulses to and from the brain, and spinal nerves that cor-

respond to the spinal cord segment. Meanwhile, the autonomic nervous system (ANS) regulates automatic functions to preserve internal body balance in everyday situations and even during periods of crisis. Sympathetic ANS provides the defense against stressors, while the parasympathetic ANS is responsible for conservative and restorative functions.

The nervous system coordinates and controls all activities of the body. It receives stimuli from the internal and external environments over varied sensory pathways. It communicates information between distant parts of the body to the CNS. It processes information received at various reflex and conscious levels to determine responses appropriate to existing situations. It transmits information rapidly over varied motor pathways to effector organs for body action control or modifications.

Common problems of the central nervous system

Many problems associated with dysfunction of the nervous system range from mild conditions such as headaches, to serious illnesses such as infections like meningitis, paralysis and other injuries. They may greatly affect thinking, responsiveness and movement.

Stroke. Blood flow to the brain is proportional to metabolic needs. The brain has the capacity to maintain constant blood flow despite wide ranges of arterial pressure, through auto-regulation. In disease conditions, such as cerebrovascular accident or stroke, blood supply to the brain is interrupted. This may be triggered by a sudden rise in the blood pressure. The damage in the brain area is caused by the blockage of a blood vessel in the brain or a rupture of the blood vessel (hemorrhage or bleeding).

Doctors call the “ministroke” event Transient Ischemic Attacks. This condition refers to transient reduction of oxygen supply to the brain resulting in neurological dysfunction. The major importance of TIA is that it may warn the “patient” of an underlying problem.

Basic safety rules to avoid injuries:

- Fasten the safety belt when riding a car.
- Never ride in a motor vehicle when the driver is under the influence of drugs or alcohol.
- Before diving in a pool, river, stream or any body of water, make certain that the water is deep enough and that there are no hazards under water.
- Wear protective headgear when riding mountain bikes or motorcycle, and use “hard hats” in occupational place like construction sites.
- Avoid riding (or clinging to) jam-packed jeeps, buses or tricycles.

Important warning signs for stroke:

- Loss of consciousness
- Numbness or weakness of arm and legs
- Slurring of words
- Facial droop
- Sudden change in vision

Seizures. A seizure as a CNS problem is similar in character to “convulsion” or “epilepsy” which is observed to occur in some children. It can be a frightening experience.

Seizures or convulsions are brief, transitory disturbances of the brain function. They are signals of some problems. When seizures occur, it is important to provide safety and privacy to the person suffering from it.

Some persons experience an “aura” or sort of warning before the seizures occur. These can be numbness, flashing lights, dizziness, tingling of the arm, seeing spots before the eyes. This warning, when sensed and perceived, allows the person to prepare and give warning that an attack is coming.

Keeping the nervous system healthy

Rest, sleep, good nutrition and daily exercise help keep your nervous system healthy. Avoiding substances, such as drugs and alcohol that can cause damage to the nervous system, is important. Injuries are the most common cause of brain and spinal cord damage.

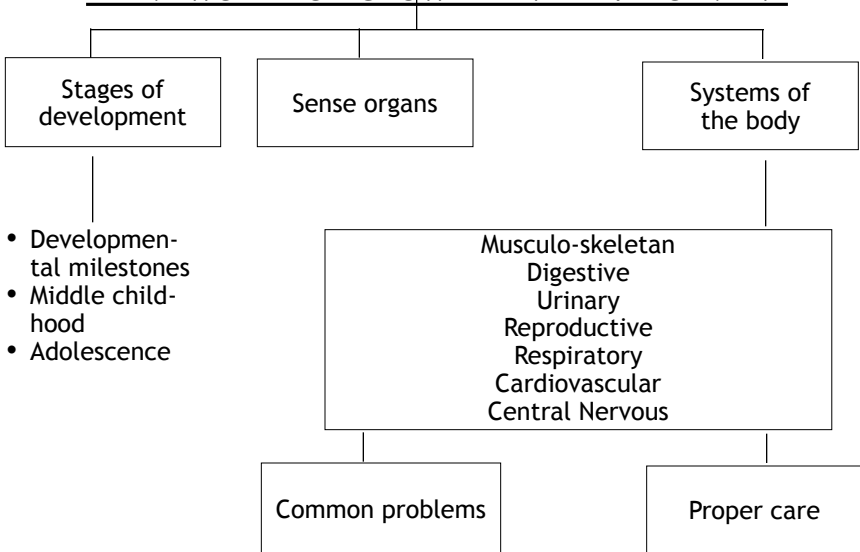
When stroke occurs, it is important to support the airway, breathing and circulation immediately. Expert care is needed to promote recovery and rehabilitation. Cardio-pulmonary resuscitation is the immediate intervention when breaking the heartbeat stop. The patient should be brought to the hospital for medical management and nursing care. Stroke is mainly a problem of the adult. All factors contributing to high blood pressure have to be controlled. Health promotion and disease prevention practice to the high blood pressure are recommended to prevent stroke and these should begin early in life.

Preventive care for seizures may be limited. Preferably, persons with a known seizure disorder should be under medical care. They are usually prescribed some medication to control the seizures. The patient should balance activity and rest and avoid heavy exercise, stress and fatigue.

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Excerpted with permission from UP Open University. *Teaching health and wellness, a sourcebook for teachers.*

FRAMEWORK FOR GROWTH AND DEVELOPMENT



CHAPTER 2

NUTRITION

Parents should maximize children's increased interest in food to encourage eating of nutritious food. General comments like "you should eat different kinds of food," "you should eat your vegetables and fruits" and "drink your milk" should instill in them the importance of food in their growth and development. Teachers can find out if the children are eating nutritious food by looking at what food the children bring to school or buy from the school canteen.

WATER

Water is vital to life. Body water represents about 45 to 75 percent of body weight. The volume and distribution of body water vary with age and sex. In the newborn, about three-fourths of the body weight is water. Volume and distribution vary over time. Water within the body together with some chemical and physical reactions maintains internal balance or homeostasis.

Water within the body cells provides equilibrium for cell function. Water outside the cells (in the blood vessels) maintains blood volume and serves as transport system to and from the cells.

The adult body is approximately 50 to 70 percent water. Fat contains little water, so that people who are overweight have a lower percentage of body water. The same is true for children. Women have less body water than men because of higher percentage of fat. As a person ages, body water decreases, so that the elderly can be expected to hold less body water than a younger person. Infants have on average 57 percent of body water and children, 70 percent.

Normally the exchange of water between the internal and external environment is equal and balance is maintained. Water and electrolytes in the body are found within the cells or outside the cell. The cells generally live in a fluid environment. Water carries wastes products out of the body through the urine, skin, lungs and feces. Water cushions and protects the body. It

also lubricates, insulates and provides structure for and integrity of the skin. The skin is instrumental in preventing water loss from the body. The skin and water also help in regulating body temperature.

The kidneys rid the body of excess water. Water is also lost through the lungs, and feces. Body water loss is aggravated by elevated body temperature, diarrhea, or vomiting. There might be a need to seek medical help if these problems occur. Losing body water, as in diarrhea, as well as retaining excess body water, is bad for the body.

Source of water intake:

- Liquid by mouth (oral)
- Water in food
- Water produced by metabolism

Ways of water loss:

- Urine
- Stool (feces)
- Evaporation of expired air
- Water lost through the skin

Maintaining water balance is important for the body. Diarrhea is an example of decreased intake and increased water loss. That is why it is important to rehydrate. During illness, when water is abnormally retained in the body and urine output is low, some serious problems may result. Shortness of breathing and edema are usual manifestations. Medical help is needed when there is too much or too little water loss.

A person needs about 6-8 glasses of water or any liquid everyday to replace what is lost in the urine, sweat and other body wastes. Juices, milk, tea, soups and sodas may add to the water intake. Many types of food, such as fruits, contain significant amounts of water. Carbonated drinks should be avoided since they contain considerable quantities of sugar. As well, packaged or powdered juices and soda usually have high calorie content because of the sugar. Fresh fruit juices are better substitutes. Commercial fruit juices are basically water, sugar, food coloring and fruit flavor.

Water contamination

Unclean or unsafe water will make people sick. Safe water is clear and free of impurities such as dirt, bacteria or parasites.

Contaminated water is usually cloudy and when put under the microscope shows bacteria, viruses or parasites that can cause infections such as intestinal worms, diarrhea, hepatitis A, typhoid and cholera. Sources of clean water for drinking are piped water systems, clean springs and deep wells. Water from the pipe system is rainwater treated with chemicals to remove impurities. Water from springs or deep wells is naturally filtered and also free from impurities. The only danger is that springs or deep wells can be exposed to animals and people's wastes. If in doubt about the source of drinking water, boil the water for three to five minutes and let cool before drinking.

Water that is heavily infected with bacteria or parasites can easily cause

diarrhea or other diseases. If the contaminated water is the main source for drinking or washing food in a community, then there could be an outbreak of illness.

Water can be contaminated at its source. In areas where rivers, spring water or wells are the source of water, contamination can easily happen if they are polluted with human and animal wastes. Normally, the river beds and spring waters and deep wells have their natural filters, that is, water passes through several layers of silt, sand, and gravel where dirt and other microorganisms are filtered through. This process assures that the water is as pure as it should be. Water in the cities usually comes from pipe system. Water that comes from pipes is usually stored, filtered and treated with chemicals by water companies. It should be relatively safe unless the pipe is damaged and contaminated soil gets through.

Water can also be infected during its storage. Containers that are dirty or left uncovered can easily collect bacteria and parasites that can multiply and cause illness. Drinking water should not be left in the container for several days.

Keeping water safe

Keeping water safe involves tracing its path from the main source until it gets to the home. Whether the source of water is the river, spring, well or pipe systems, water should be kept clean. Water systems can be kept clean by seeing to it that pollutants such as solid or liquid waste do not get into the water bed. There should always be proper filtration installed or the natural filtration should be kept undisturbed. Water also needs to be treated with chemicals that will kill harmful microorganisms. Chlorine is the most commonly used in treating large water supplies whether in deep wells or water tanks. Water samples are also collected periodically by public health workers to test the water for the presence of harmful organisms like salmonella typhi, which causes typhoid fever or E. coli, which can cause diarrhea.

Proper water storage is also an important step in keeping water safe. Water containers should be cleaned properly before they are used. They should also be tightly covered so that no insects or animals can get to the water. Stored water should not be placed in hot or damp places to prevent the growth of molds that can be harmful when ingested. Needless to say, stored water should not be left standing undisturbed longer than a few months. It is always better to have a fresh supply of clean water for drinking.

FOOD

Food is necessary for people to survive. The food that is eaten is digested in the body and converted into nutrients that the body uses for different

processes. A person who does not eat properly usually gets sick. Since the body needs different kinds of nutrients, children should eat different kinds of food for breakfast, lunch, dinner and snacks. Junk food should not be encouraged since they don't contain any nutrients. The five major food types are listed in Table 4.

Energy-giving food or carbohydrates are the starches and sugars for fats. Starches and sugar are necessary for work and play. The more work or play a person has, the more he/she needs starches and sugars. Fat is a concentrated form of stored energy. The body can change stored fat into sugar when the body needs more energy. Eating a lot of fat can be harmful, but eating some fat or oil with each meal is all right. A diet of energy-giving food is not enough. Children need the other food groups.

Body-building food is protein-rich, necessary for proper growth and development of the body, especially of the bones and muscles. Protein-rich food also helps the body repair itself. To grow and be strong, every child needs enough protein. Food rich in protein should be included in the growing child's diet.

Body-regulating food like fruits and vegetables are rich in vitamins and minerals. Vitamins are protective food that helps the body work properly. Minerals are needed for making healthier bones, teeth and blood.

People need a balanced diet to remain healthy and strong. Fresh fruits and vegetables should be encouraged together with whole grain meal and cereals. Fatty food should not be eaten daily to minimize fat intake. Sugary snacks such as cakes and pastries should be reserved for special occasions, so that tooth decay may be minimized. Snacks can consist of fresh fruit, nuts, dried fruit or root crops rather than sweets and pastries.

Many adults are fond of plump children and they encourage children to

Table 4. Major food types

Starches	Food high in protein	Food with some protein	Body-building food	Fats
Rice	Meat	Beans	Dark green leafy vegetables	Cooking oil
Corn	Chicken	Peas	Yellow vegetables	Lard
Cereals (oats, wheat)	Eggs	Lentils	Fruits	Butter
Noodles	Fish	Nuts	Whole grain cereals	Margarine
Camote	Seafood	Sugars	Seaweed (for iodine)	Peanuts, nuts
Cassava	Milk	Sugar		Soybean
Gabi	Cheese	Honey		Coconut
	Soy beans	Sweet fruits		Avocado
		Molasses		

eat meals rich in fats and sugar. But this is harmful to the children's health. There is a concern that obesity has its beginning in infancy or childhood. The reason for this is that in many families, food is used as a reward for children. Once a child becomes fat, there is the tendency for him/her to have a decreased pattern of activity. This leads to further weight gain and the possibility of problems such as carbohydrate intolerance and risk factors for heart problems.

Food contamination

Communicable diseases are classified as air-borne, water borne or food borne, based on the mode of transmission by which the disease agent enters the host. Most childhood diseases are caused by contaminated food and water. These manifest as stomachache, nausea and vomiting and/or diarrhea leading to dehydration, which if not properly managed can lead to death.

Contaminated food means that disease-producing microorganisms are present in the food. These disease agents may be a bacterium, virus or parasite. Once these are ingested with the food, a susceptible host—usually with poor nutritional status—develops symptoms of illness. These microorganisms are not visible to the naked eye and people cannot tell by just looking whether the food is contaminated or not. Not all microorganisms in food are harmful (some like the lactobacilli aid digestion) but some can be very harmful. There are the bacteria that can produce toxins (poisons) and cause disease or even death. There are also parasites that can stay inside the body and multiply there, competing with the child's own nutrition. When children are well-nourished, the microorganisms may not be able to multiply and cause harm. However, children who are poorly nourished have no defense against microorganisms.

Food contamination can happen in various ways—from production, storage, preparation, to serving. Food crops grown in soil contaminated with human or animal waste or irrigated with contaminated water can cause infectious disease. Contamination can also happen during transport and storage of food. Food can be carelessly left in dirty or open places where rodents, flies, and pets can get to them. These animals can easily be carriers of the disease-producing microorganisms. Food preparation is another stage where microorganisms can contaminate food. Dirty hands in preparing the food can be a source of contamination, as can a dirty working area or dirty cooking utensils. When food is not cooked properly or it is prepared several hours before serving, microorganisms can multiply. Food handlers who are not conscious of cleanliness can also contaminate food.

Keeping food safe

Teaching the children how food and water can be contaminated is the key to help them understand how to keep their food and water safe. It is also

important for them to know how microorganisms can cause diseases. The growth of the microorganisms outside a person's body depends on several factors, specifically warmth, food and moisture. If microorganisms are exposed to high temperature, their growth is limited. These facts have bearing on controlling food contamination. There are basic rules that can be taught to children to avoid food and water contamination. The basic for safe food are general cleanliness, proper food storage, and proper food preparation and handling.

Safe food rules:

- Maintain cleanliness. Wash hands, food, utensils and work surfaces.
- Store food in a cool dry place, properly covered and away from flies and animals.
- Cook food thoroughly. Serve food in clean utensils.
- Eat food promptly.
- Reheat food leftovers.

Cleanliness. The simplest, but most often violated rule, is washing the hands before preparing, serving and eating food. One should wash the hands especially after using the latrine, after handling raw meat, poultry or fish or after petting animals. Ideally, the hands should be washed with soap under clear running water. Also part of cleanliness is proper washing of food items, kitchen utensils and working surfaces. Fresh fruits and vegetables definitely need to be thoroughly washed before cooking or eating. Kitchen utensils should also be washed before they are used, dried or stored in cupboards.

Proper food storage. Microorganisms in food multiply very fast in a warm environment. There is a need therefore for food to be stored in a cold place, preferably in refrigerators. The cool temperature inside the refrigerator limits the growth of microorganisms. In homes that do not have refrigerators, some food like meat, fish and poultry can be safe only within a short period of time. It is important therefore for the family to buy food needed for only one day. There is less of a problem with dry food or preserved food such as salted food and grains. They can be kept in a cool dry place inside a clean container or kept covered. What is important is to keep flies or other insects or animals away or prevent molds from growing.

Food preparation or cooking. The person preparing food should be clean and healthy. Someone who has a bad cough, infected cuts or sores or diarrhea, must not be allowed to cook food. If there is no choice, he/she must be made doubly aware of the need for frequent and proper hand washing and using a mask to cover the mouth and the nose when coughing or sneezing, and for putting a clean dressing on cuts or sores. Food handlers must be careful in handling raw food, especially meat, which can have live microorganisms that can contaminate cooked food. Meat frequently contains bacteria that have doubled in number from the time the animal was slaughtered to the time it was cooked. Meat is also frequently left on display in wet markets, open to flies. Some parasites can also be present in the animal even

before it is slaughtered. These microorganisms can easily cause illness if the meat is not sufficiently cooked.

The long process that the food has to go through before it is finally served provides occasions for it to be contaminated. Clearly, it is important for children to appreciate the value of keeping food safe. Children should be warned about the danger of buying food from street vendors. Food sold on the streets may be contaminated by unhygienic preparation and handling or exposed to flies or other animals or may have become spoiled.

NUTRIENTS AND NUTRITION

Nutrition is the area of health that focuses on making food choices that will promote growth and development and reduce the risk of disease or illness. The body uses the nutrients from food as source of energy, as materials for growth and body-building, and as essentials for regulating body processes. Nutrients are needed in adequate amounts for normal body functions. Good nutrition is dependent on the combination of food that provides the various nutrients on a daily basis. Too much or too little of the same nutrient may lead to illness.

Nutrients are chemical substances in food that furnish body fuel for energy. They are important in regulating in certain body processes. They provide materials for building and maintaining body tissues (body cells). No one food contains all nutrients in the amount needed for health. A balance of the six classes of nutrients is essential.

There are six basic classes of nutrients: protein, carbohydrates, fats, vitamins, minerals, water.

Proteins are nutrients that are essential for growth, development and repair of all body tissues. They support the function the body and the sense organs. Proteins are important for parts of muscles, bones, blood, cell membranes. They also help in regulatory functions of body process through the hormones and enzymes they form. Proteins may also be used as a source of energy. Excess proteins may be converted into body fat and may be conserved for later use.

The building blocks of proteins are amino acids. There are about 22 different amino acids that the body needs for good health. Although the body can produce several of the amino acids, certain amino acids—called essential amino acids—must come from food. There are two classifications of proteins—complete and incomplete. Complete proteins are those that contain all the essential amino acids. Complete proteins come from meat, fish, poultry and eggs. Incomplete protein like that from nuts, seeds and

beans lacks some of the essential amino acids. It is good to combine different sources of complete and incomplete proteins when planning meals.

Carbohydrates are classified into simple and complex carbohydrates. Simple carbohydrates are also called simple sugars. Fruits and honey (*pulot*) are examples. Simple carbohydrates enter the bloodstream (or circulation) and provide a source of quick energy. Complex carbohydrates provide a long lasting source of energy. The following are examples of complex carbohydrates: rice, wheat, oats. The typical types of *kakanin* (*bibingka*, *biko*, *puto*) that are usually served for snacks in most local communities are examples of complex carbohydrates. About half of the average daily intake should come from complex carbohydrates, as they generally low in fat content.

Fiber or roughage is also a complex carbohydrate. It is the indigestible materials in grains and plant food. Fiber is not digested; it does not provide energy and is not considered a nutrient. But fiber is an essential component of the diet because it helps keep the digestive track healthy. All plant food contain some dietary fiber. The sources of fiber are wheat, bran, cereals, fruits and vegetables.

Fats are a source of energy, needed for immune system function and vitamin absorption. It also cushions the internal organs of the body, such as the heart, liver, and kidneys. All fats and oils in food are composed of a mix of saturated, unsaturated and polyunsaturated fat.

Short and medium chain saturated fat, present in breastmilk and coconut oil, are utilized immediately by the body for energy and are not bad. Long chain saturated fat are present in meat and dairy products, usually solid at room temperature, and contribute to the “bad” blood cholesterol level. Unsaturated fatty acids (e.g. canola oil or sunflower oil) are good as long as it is not refined or hydrogenized. Hydrogenization is a process done to extend shelf life of products and produces trans fat, which increases “bad” cholesterol.

Cholesterol is a fat-like substance made by the body and found in food. Bad cholesterol (LDL) accumulates on the walls of the blood vessels, decrease the size of the passage for blood, and lead to heart attacks and stroke. Good cholesterol (HDL) carries excess cholesterol back to the liver. By making children conscious about cholesterol intake, prevention of illnesses in adult life is emphasized.

Good to Eat:

- Plant based diets rich in omega 3 polyunsaturated (soya, corn), mono-unsaturated (olive, canola, peanut) or medium chain saturated (coconut) fat, nuts (almonds, peanuts, walnuts, pecans), and deep sea fish

- (salmon, mackerel)
- NOT hydrogenized or refined fat (no trans fat)

This is recommended for a healthful diet.

A person who eats a balanced diet containing all the food groups will most likely get adequate amounts of vitamins from food. Water-soluble vitamins are B complex and vitamin C. These have to be taken daily as the body does not store them. Vitamins A, D, E, K are fat soluble and are stored in the liver.

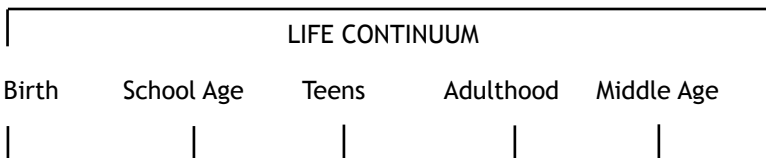
Minerals are inorganic substances in food that are needed by the body in small amounts. They help in regulating the chemical reactions in the body.

- Iron is an important component of the hemoglobin in blood. Hemoglobin is the oxygen-carrier of the body. Eating green leafy vegetables, seafood, lean meat and whole grain bread assures the body of adequate iron.
- Calcium is needed for building bones and teeth and for maintaining bone strength. All cells in the body need calcium. It functions in muscle contraction and in blood clotting. Good sources of calcium are milk, milk products like cheese, dark green leafy vegetables and dried beans.
- Sodium helps regulate the balance of fluid in the body. In most cases, requirements of sodium in the diet can be met without extra salt in the food. Table salt is a major source of sodium. The best table salt is iodized salt. Salt should be kept in a covered container.
- Zinc is involved in numerous aspects of cellular metabolism. It plays a role in immune function, protein synthesis, wound healing, DNA synthesis, and cell division. Zinc also supports normal growth and development during pregnancy, childhood and adolescence, and is required for proper sense of taste and smell. Oysters contain more zinc per serving than any other food, but red meat and poultry are the more common sources of zinc. Other good food sources include beans, nuts, crab and lobster, whole grains, fortified breakfast cereals and dairy products.

Water is a nutrient that has no calories. It helps in the process of digestion and removal of body wastes. It also regulates body temperature.

Making good choices about food, having safe water to drink and observing adequate sleep and rest promote wellness and good health.

A Rationale for wellness, health and illness prevention



There is a long time period for building good health practices. By teaching the importance of good nutrition and good health practices, (e.g. adequate rest, relaxation and sleep), health, wellness and illness prevention are promoted. The time for illness prevention is from birth to before middle age. Good nutrition has been associated with prevention of heart disease, hypertension, cancer and diabetes, which are examples of middle age chronic illness. Being healthy means a better quality of life.

Nutrients that provide energy

Energy is required for all body functions and processes such as breathing, digesting, absorbing and metabolizing food, maintaining body temperature, building new tissues and moving the body in work and play.

Children generally require more energy per unit of body weight than adults. This is because they are usually very active and they are still growing. Individual children need varying amounts of energy depending on their rate of growth, physical activity and body size. The number of calories needed daily is calculated in the basis of normal body weight. Stable weight is achieved by balancing the energy from food and the energy expended in body processes and physical activity. The amount of potential activity in food is expressed in calories. The energy cost of a given activity is also measured in calories.

Calories in fat, protein, carbohydrates and alcohol:	
1 gram of fat	= 9 calories
1 gram of protein	= 4 calories
1 gram of carbohydrate	= 4 calories
1 gram of alcohol	= 7 calories

Eating fewer calories than are needed by the body results in weight loss. Eating more calories than is needed over a period of time may result in being overweight or obesity. Obesity in children cannot be ignored. Obese children are less coordinated in their movements and prone to accidents. Hence, they are less inclined to join physical activities. They are also subjects of ridicule by classmates and peers. If this problem is not solved in childhood, the child can suffer from the problem up to adulthood. Obesity in adults can lead to chronic conditions like heart disease or diabetes.

Recent studies show that people consume more refined sugar than complex carbohydrates. Refined sugar is unhealthy because it consists of empty calories, without any vitamins and minerals. Eating too much refined sugar also increases

Some Reminders for Eating Right:

- Consider the food guide pyramid. Start from the base: carbohydrates.
- Decide on the servings needed.
- Help children make healthy choices.
- Adults need to model good eating habits.
- Be careful about the fat in food.
- Take adequate amounts of water.

Children have to be motivated to eat a nutritionally balanced diet and to drink adequate amounts of clean water daily.

susceptibility to obesity and diabetes and other vitamin deficiency states. Refined sugar has also been linked to tooth decay among children. A related concern is the use of artificial sweeteners. They may be used by adults but there is still a question with regard to their use by children. Aspartame, one of the artificial sweeteners, contains phenylalanine, an amino acid which cannot be metabolized by children with phenylketonuria. Accumulation of phenylalanine in children can lead to irreversible brain damage.

Fats in the diet are important for making vitamins A, D, E and K available to the body. It is all right that children below two years old are not stopped from eating fatty food. It is at age two and above that children should be encouraged to limit the intake of fatty food. [*See also Table 4 on page 41*]

Nutrients that promote growth and body-building

Childhood is a period of growth and body building. An increase in physical size can be seen either in the entire body or in any body part. Children gain in height and in weight. They should be given the right nutrients in the right amounts to maximize their growth potential. Remember that growing children need more protein than adults, in proportion to weight. Deficiency in protein can lead to muscle wasting or underdeveloped muscles and poor immune resistance. Children who are malnourished are susceptible to diseases.

Normal growth is also dependent on normal blood supply. Lack of iron in the diet leads to the condition called iron-deficiency anemia. This is due to insufficient red blood cells. Children with anemia are easily tired or fatigued and have lower energy levels and poorer resistance to illness and infections. Their growth is also stunted.

Certain minerals, such as calcium and phosphorus, are also necessary for growth. Children need these minerals not only for bone growth, but also for replacement of existing bone. Calcium and phosphorus must be taken in equal amounts since an imbalance in proportion can lead to impaired absorption. Children in the habit of drinking carbonated drinks (e.g. soft drink) increase their intake of phosphorus, which leads to “bone cannibalism” or withdrawal of calcium from the bones. This is why it is important to give children milk rather than carbonated drinks.

Nutrients that regulate body functions

Regulation of body processes is very important for the functioning of the whole body. It is also very complex. Every nutrient is involved with the other in regulating body processes. For instance, the antioxidants vitamins C and E and beta-carotene, have been known to lower the risk of heart disease. Fruits and vegetables are also known to protect the body from cancers. A daily serving of five different fruits is recommended.

Minerals and their uses

Food provides the body with the energy needed for all human activities. It is needed to maintain body temperatures, to keep the heart beating, and to make the brain work.

Food provides the body with nutrients, which are substances that the body needs to regulate body function, promote growth, repair tissues and produce energy. When the body uses nutrients, a series of chemical reactions occur and energy is released. Metabolism refers to the release of energy as food is broken down. The amount of energy released when nutrients are burned is measured in units called calories.

Minerals are nutrients that are not manufactured by living things. Minerals occur naturally in rocks and in the soil. Plants absorb minerals through their roots. Animals get minerals from eating plants. Human beings in turn obtain minerals by eating plants or animal food sources that have directly or indirectly absorbed minerals from non-living substances. The human body requires only small amounts of minerals of special nutritional importance.

Table 5. Effects of mineral deficiency

Mineral	Good Sources	Body Functions	Effects of Deficiency
Calcium	milk, milk products dark green leafy vegetables	Helps build and maintain bones and teeth; nerve and muscle function; blood clotting	Osteoporosis in adults, rickets in children
Phosphorous	meat, eggs, poultry, fish, legumes, milk and milk products	Helps build and maintain bones and teeth	Body weaknesses, pain
Potassium	vegetables, fruits, meat, poultry, fish	Helps maintain water balance and make protein, aids in functioning of the heart and nervous system	Muscle weakness, vomiting
Iron	red meat, seafood, legumes, green leafy vegetables, dried fruits	Part of red blood cells; helps in energy metabolism	Anemia
Zinc	meat, poultry, seafood, whole grain food	Part of substances helping carry out body function, neuro-development	Nausea, diarrhea, stunted growth
Iodine	seafood, iodized salt	Helps in metabolism, thyroid hormone	Goiter, mental & physical retardation
Fluorine	fish, fluoridated water	Helps form strong teeth and bones	Tooth decay

These include calcium and phosphorus, which help provide structure for the body's skeletal framework. Iron works to benefit the hemoglobin in blood. Iodine is a necessary element of the thyroid hormone, which in turn controls the rate of metabolism. Sodium, chloride and potassium work for proper functioning of the cells.

There are seven major minerals present in the body, namely Calcium, Magnesium, Phosphorus, Chlorine, Sodium, Potassium, Sulfur. The remaining minerals are present in smaller amounts and are called trace elements e.g. Iron, Iodine, Zinc, Selenium, Fluorine, Copper, Manganese. [See Table 5]

Calcium. Of all the minerals in the body, calcium occurs in the largest amount. Aside from bone and tooth formation, calcium is needed for vital body functions such as blood clotting, muscle contraction and relaxation, nerve transmission, cell membrane function and activation of some enzymes. It is important for children to have calcium in the diet to build stronger and denser bones. More than 90 percent of bone density develops by the age of 18. Milk is an important source of calcium and should be part of children's diet. Breastmilk is the most important food for the baby up to two years. Infants should be given purely breastmilk up to six months, after which semisolid food may be added to the diet. The recommended daily allowance of calcium for Filipino adults is 500 mg, as established by the Food and Nutrition Research Institute, the agency that sets the daily requirements for Filipinos.

Phosphorous. This is closely associated with calcium in human nutrition. Body phosphorus helps make bones and teeth. It has many other functions for metabolism, especially for cellular function. Milk and milk products and bananas are the most significant sources of phosphorous.

Iron. About 70 percent of the body's iron is in the red blood cells as a vital component of hemoglobin. Hemoglobin is a protein that gives color to the red blood cells, and carries oxygen to in the blood. Some of the body iron is stored in the liver, spleen and bone marrow.

Iodine. Trace elements of iodine are found in the muscles, thyroid glands, skin, skeleton, and other vital body tissues. Iodine is needed to produce the thyroid hormone, which prevents mental retardation, growth retardation, physical deformities, and in pregnant women, miscarriage and still births. Based on recent studies, the lack of iodine in the diet

Food sources of iron:

Organ meats, especially liver (best source), meats, seafood, seaweeds, egg-yolk, whole or enriched grains, legumes, nuts, green leafy vegetables e.g. malunggay, petchay, gabi leaves, kamote tops, alug-bati, kangkong, saluyot

Food rich in iodine:

Dilis, pusit, kuhol, lato (seaweeds), talaba, crab, tahong, alamang, shrimps

Table 6. Estimates of cholesterol in selected food

LOWEST (99 mg & below per 100 g edible portion)					
Meat & Poultry	mg	taba, kalabaw	48.6	pusit	56.0
baboy, liempo	73.3	taba, manok	51.5	salay-salay	38.5
baboy, laman	62.9	Fish & Shellfish		salmon	31.1
baka, dila	86.5	alimasag	72.5	sapsap	26.0
baka, goto	25.4	alumahan	79.4	samaral	91.1
baka, puso	82.9	alupihang dagat	52.5	susong pilipit	44.2
baka, laman	64.5	bagoong	75.8	tahong	53.0
kalabaw, dila	49.5	banak	33.3	talaba	59.0
kalabaw, puso	65.9	bangus	51.8	talangka	95.6
manok, laman	68.8	bisugo	47.3	tamban	40.5
Cheese		kanduli	54.6	tangigi	2.3
keso, puti	38.8	kuhol	26.7	tilapia	21.1
keso, baka	6.5	dilis	19.0	tulingan	66.4
keso, kalabaw	9.8	galungong	73.6	tulya	35.1
Animal Fat		hipon, suwahe	80.2	tulang, malaki	89.0
mantikilya	74.7	hito	47.8	Eggs	
taba, baboy	50.7	lapu-lapu	4.4	itlog, itik, puti	nil
taba, baka	88.9	pampano	74.1	itlog, pugo, puti	0.1
HIGHEST (300 mg & below per 100 g edible portion)			LOW (100-199 mg 100 g edible portion)		
Meat	mg			Meat & Poultry	mg
baboy, utak	1643.6			baboy, atay	190.0
baka, utak	1672.3			baboy, bituka, malaki	118.6
kalabaw, utak	1884.9			baboy, dila	100.8
kalabaw, baga	350.3			baboy, puso	101.3
Eggs				baka, atay	190.2
balut	515.2			baka, bituka, maliit	102.6
itik, buo	418.4			manok, puso	135.9
itik, alat	437.9			manok, balun-balunan	130.0
itik, pula	759.6			Fish & Shellfish	
manok, leghorn, pula	731.6			alimango	128.1
manok, tagalog, buo	300.7			biya	104.2
manok, tagalog, pula	741.6			kitang	110.7
pugo, buo	357.0			hipon, tagunton	127.4
pugo, pula	933.2			ulang, maliit	131.2
AVERAGE (200-299 mg for 100 g edible portion)			kalabaw, bato		
Meat	mg				183.4
baboy, baga	239.0				
baboy, bato	215.7				
baboy, lapay	255.0				
baka, baga	242.2				
baka, bato	220.2				
baka, lapay	263.4				
kalabaw, atay	202.0				
kalabaw, lapay	239.6				
manok, atay	265.5				

Adapted from Food and Nutrition Research Institute, Department of Science and Technology

of a pregnant woman can result in physical and mental disabilities of babies. The easiest way to prevent this is the habit of using iodized salt in cooking.

EATING FOR A HEALTHY BODY

Eating properly can improve chances for a long and healthy lifestyle. Following a diet for a healthy heart need not be a deprivation. For every food that should be avoided or limited, several others can be substituted. The nutritional guidelines presented here were developed in due consideration of the situation surrounding the average Filipino.

Medical experts have long suspected that what we eat may play a role in the development of heart disease. Food with too much fat, saturated fat and cholesterol can raise serum cholesterol, blood pressure and weight. Becoming obese increases the risk of adult-onset diabetes, and all of these factors increase the risk of heart disease.

Diet and less cholesterol. Recall the concept of “good” and “bad” cholesterol. It is desirable to have low “bad” cholesterol levels (LDL cholesterol) and relatively high “good” cholesterol levels in the blood (HDL cholesterol).

Having some cholesterol in the diet is rather harmless, but for many people too much of it increases the level in the blood stream. Cholesterol is found in food of animal origin; meat, poultry, fish, shellfish, eggs and dairy products all contain cholesterol. Of all the common eaten cholesterol-containing food, egg yolks and organ meats contain the most.

Find out the amount of the cholesterol recommended for a daily diet. To get an idea of the amount of the cholesterol in commonly eaten food, refer to Table 6. The recommended amount of dietary cholesterol is no more than 300 mg per day. One egg yolk contains about 213 mg of cholesterol. Keep in mind that egg whites do not contain cholesterol or fat. Adding only the egg white to prepared dishes is the way to eat the egg without the cholesterol.

All fat have the same number of calories (nine calories per gram). But with All the fats have the same number of calories (nine calories per gram). But with respect to a healthy heart, not all fats are the same. It is the long chain saturated fatty acids in particular that tend to raise blood cholesterol. The primary factor in raising blood cholesterol levels is not eating excess cholesterol but consuming too much of the long chain saturated fat, which mostly comes from animal fat in the diet.

Unsaturated and medium chain saturated fat do not raise blood cholesterol level. In fact, they can lower blood cholesterol level. To limit cholesterol,

limit food high in fat and alcohol.

Setting a fat gram limit per day can help when planning a weight loss program. Recording what has been eaten and noting the fat-gram content may help in making better choices. Whole wheat bread, rice and pasta are low in fat. Fish, shellfish, and skinless chicken are also low in fat. Baked or boiled potatoes are fat free. Generous amounts of fruits and vegetables may be eaten as these are mostly fat free.

Dietary fiber. Fiber is the part of plants that cannot be digested or absorbed. It passes through the gastrointestinal tract without any chemical change but has important functions for health. Water-soluble fibers speed up elimination of waste from the large colon (large intestines), as well as sugar and fat from the body. These fibers are found in wheat, rice bran and whole wheat bread. Water-soluble fiber has been shown to have a cholesterol-lowering effect.

Water-insoluble fiber has many health benefits of its own, such as preventing constipation and other gastrointestinal condition. This is found in wheat bran, whole wheat flour and bread, cereals and vegetables. A healthy diet should include fiber in generous amount.

Fiber in the diet helps in weight reduction by producing an early feeling of fullness. It also helps control blood sugar levels by bringing about faster emptying of the gastrointestinal tract and by delaying absorption of sugar in the intestines. The role of fiber in the diet has also been associated with the prevention of other gastrointestinal disorders and cancer of the colon.

Here are some guidelines for cutting down on sugar.

- Develop the habit of serving fresh fruits for desert.
- Don't stock on sweets and candy in the house. Substitute popcorn, raw vegetables, or fruit.

Nutritional Guidelines for Filipinos 2000

- Eat a variety of food daily.
- Breastfeed infants exclusively from birth up to six months, and then give them appropriate food while continuing to breast-feed (breastfeeding can go even beyond two years).
- Maintain children's normal growth through proper diet and monitor growth regularly.
- Consume fish, lean meat, poultry, dried beans adequately and appropriately.
- Eat more vegetables, fruits, root crops.
- Eat food cooked in edible or cooking oil in moderation.
- Consume milk, milk products, other calcium-rich food, such as small fish & dark green, leafy vegetables everyday.
- Avoid excessive intake of salty food. Use iodized salt.
- Eat clean and safe food.
- Exercise regularly; do not smoke; avoid drinking alcoholic beverages.

Adapted from Food and Nutrition Research Institute, Department of Science and Technology, June 2000

- Avoid using sweets to reward children.
- Avoid soft drinks.
- Gradually reduce the amount of sugar in coffee or tea
- Get in the habit of reading labels on processed food. Avoid those that list sugar among the top ingredients.
- Reduce sugar in recipes for baked products.
- Be creative. Try new combinations and preparations to create sweet flavors without sugar.

Salt intake. Most of us eat more sodium than our bodies need. Too much salt in the diet can lead to high blood pressure. People with high blood pressure are more likely to develop stroke, heart disease and kidney disease. That is the reason why early in life children should regulate their salt intake. The preference for highly salted food is not innate. Most acquire it during childhood eating sodium-laden food, particularly processed meats or canned food.

Where does our sodium intake come from? Most of the sodium or salt intake in our diet is added while preparing food, at the table or during processing. There is also quite a large amount of sodium in common snacks like instant noodles, chips, processed meat (hotdog, bacon, ham), chicharon. As a rule of thumb, it is best to check the package label for the amount of sodium in a particular food item.

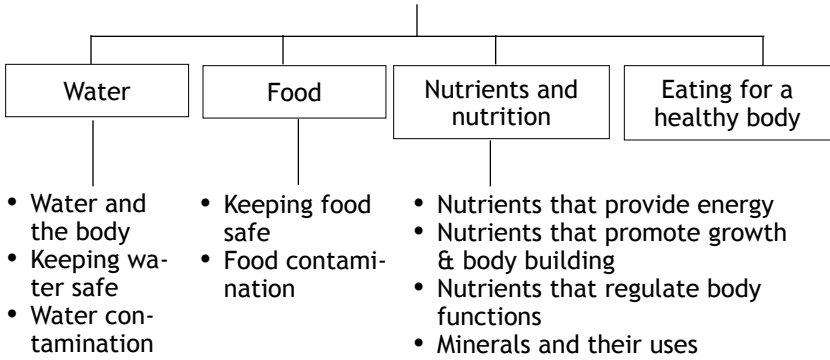
Here are some useful tips to reduce salt in the diet.

- Use less or no table salt (sawsawan).
- Use less salt when cooking.
- Limit intake of food high in sodium: canned, packed dried soups, salty snack food, luncheon meats, cold cuts, cured meats (tocino), salted dried fish (daing or tuyo).
- Look for snacks labeled “with no salt added.”

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FRAMEWORK FOR NUTRITION



CHAPTER 3

PERSONAL HEALTH

Health is personal. It is a self-responsibility. Parents and other adults take the responsibility in looking after children's health. But as children grow older, it is essential that they take responsibility for their own health. In reality, no one can take a bath for the child or keep the child clean, well-groomed and tidy except himself. In so doing, it is necessary that children understand the concept of cleanliness (grooming) and develop life skills that promote personal health.

Looking and feeling good promotes health – physical, emotional and even psychosocial. What people feel is reflected in the way they carry themselves. If a person stands huddled in a corner of a room, worried that someone might notice her bad hair day or decaying teeth, there is a big chance that people may wonder what is wrong with her. On the other hand, if a person feels confident about himself, he can walk tall and face everyone with a warm smile. This outward show of confidence could almost certainly win him new acquaintances and even friends.

Most diseases among children are transmitted through the oral-fecal route. Germs and worms (or their eggs) from the feces of one infected person enter the body through the mouth, through dirty hands or contaminated food or water. Diseases that are transmitted this way include intestinal worms, diarrhea and dysentery, hepatitis, typhoid fever and cholera. Daily habits of caring for the body help keep away germs, thus preventing disease or illness.

This chapter explores a person's changing appearance and how it affects his/her health. It deals with how certain parts of the body function and how this affects the way people see and feel about themselves. Also discussed are the ways to handle problems that may contribute to low self-image, the importance of having and following a personal health management plan such as undergoing a regular health screening and achieving desirable level of physical fitness.

Children should start early in developing daily habits of good grooming. Daily habits of taking a bath, combing hair, brushing teeth, washing hands before eating and many others are usually developed at home. The school then reinforces these good habits.

There are children who may not have sources of water at home, much less potable or clean water. How then can they be taught to take a bath daily and wash their faces and hands? There is nothing to stop the teacher from teaching these good habits in school. What can be done also is to make it a school exercise for pupils to clean their faces using a damp cloth or towel, brush their teeth and wash their hands.

Children who are clean and well-groomed should also be praised. Checking the pupils' cleanliness everyday would help in developing good health habits.

A personal health management plan includes being well-groomed, caring for the body parts and sense organs, observing good posture, having regular medical and dental check-ups, obtaining adequate sleep and rest and achieving a desirable level of physical fitness.

GROOMING

Grooming means taking care of one's body. It requires regular cleansing of body parts, taking care of the sense organs (eyes, nose, ears, nose, tongue, skin), wearing of clean and comfortable clothes at all times to prevent spread of disease causing microorganisms from one part to another. It also includes observing good posture.

No doubt, good grooming adds to the social and emotional well-being of a person. If a person is not well-groomed, he/she may be subjected to rejection and ostracism by peers. This, for a fact, lowers feelings of self-worth. In contrast, being neat, clean, smelling good and having a pleasant and clean appearance enhance self-confidence and foster acceptance from peers.

Good posture

Posture is the comparative position of different parts of the body at rest or during movement. Good posture refers to the alignment of the head, shoulders and the pelvis. Observing good posture promotes optimum functioning of the internal organs. Those with poor posture are likely to experience pain in the back, neck, headaches and other physical discomforts. Having good posture may also be a sign of feelings of positive self-esteem, self-worth and self-confidence.

How to maintain good posture

As people age, there is a high natural tendency to slouch when standing,

walking and sitting. To prevent this, draw an imaginary line through the neck, shoulder, lower back, pelvis and hip, knee and ankle joints when standing and walking. When sitting, make sure that hips and the back of your thighs support body weight. Using chairs that give support to the lower part of the back also help keep good posture.

Poor posture is a result of the following:

1. Being conscious about an unusual height. Tall children and young adolescents who are often conscious about their height cause them to slouch to compensate.
2. Lack of regular exercise. Good posture requires overall muscle strength to keep the skeleton supported and maintain alignment.
3. Sitting in one spot for the longest time. Change the position of the back through stretching and walking to relieve back strain that contributes to poor posture.
4. Excess weight and chronic fatigue.

Detecting poor posture may prevent development of deformities like curvatures of the spines that is most commonly seen in young people. Curvatures of the spine have three types: kyphosis, lordosis and scoliosis.

- a. Kyphosis (kuba) is the excessive rounding of the back creating a humpback appearance with the shoulders rounded.
- b. Lordosis is a curvature of the spine that creates a “sway-back” appearance. [See Figure 8]
- c. Scoliosis is the lateral of S-shaped curvature of the spine. Untreated scoliosis may lead to permanent disfigurement. Early detection may prevent the need for surgery.

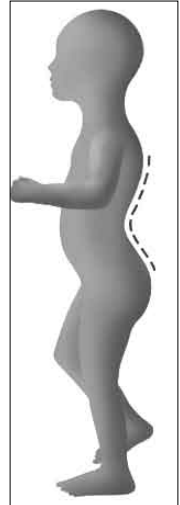


Figure 8. Lordosis

The hands and nails

The hands are undoubtedly among the most useful parts of the body. Considering the inordinate number of times they are used in a day, this is the very reason why they need special care and attention.

The nails being part of the hands need equal attention too. A nail is a hard tissue made of a protein called keratin. It protects the surface of the tips of fingers and toes. Parts of the nails include the base of the nail bed where the nail cells grow and push forward (matrix), the tissue underneath the nail (nail bed), the hard plate that covers the fingertip (nail) and the flap of skin which covers the area where the nails grow (cuticle).

It takes around three months for nails to grow from the root to the tip. Fingernails grow about three millimeters each month while toe nails grow

more slowly.

Most common nail problems

1. Brittle nails
2. Chipped nails with white flecks or ridges on the surface of the nails can be signs of an unbalanced diet.
3. Nail biting is a nervous habit which results in painful and sore fingers.

Care for the hands and nails

Protect hands whenever possible by wearing rubber gloves when doing the dishes, gardening and washing up. Wash hands thoroughly with the same soap used on the face. Observe the clasping, rubbing, and interlacing movement when washing hands. Remember to dry hands if they have been in water. Most importantly, apply moisturizing creams as often as possible.

Use a nail brush to remove dirt from behind the nails. Keep in mind that fingernails can collect dirt and bacteria that may cause disease and other ailments. Trim nails using a pair of nail scissors or nail clippers. Cut them in a slight curve. Do not clip too close to the edge of the finger to prevent accidental clipping of the skin. Leaving a little bit will also help in removing dirt. File nails gently with an emery board to get rid of the rough edges. File in one direction only. Very gently push the cuticle using a cotton bud.

For brittle nails, massage in cuticle cream before you go to sleep. Ease cuticle back off the nail gently and never push them with sharp, metal objects. Do not grow long nails unless they are naturally strong.

Eat food that are rich in calcium e.g. milk, fish, eggs and other dairy products. Calcium is a mineral that will help strengthen nails.

Soak hands in warm water for about five minutes to soften the skin and cuticles.

Children should be discouraged from nail biting. Fingernails can collect germs and other disease-causing microorganisms. Using an evil-tasting lotion to paint on nails may help stop the habit.

The hair

One can truly make a statement for himself/herself through his/her hair. Grow it, crop it, curl it, color it or braid it. Something different can be done with hair everyday. This is the very reason why hair care is essential in grooming.

Hair is made up of keratin. It has live and dead parts. The strands of hair that people see is the dead part of the hair known as hair shaft. The live

part is part of the hair that grows from a tiny pocket called a follicle, which is found just below the surface of the skin. Another part of the hair is the sebaceous gland which produces the sebum that coats and protects hair. The papilla is the base of the hair follicle, responsible for hair's continuing growth. Melanin is the substance which determines hair color. The scalp is the surface of the head.

Hair may appear to be curly, wavy or straight depending on the shape of the root from which the hair grows. There are around 150, 000 individual hairs growing on the head. Each hair grows about 1.25 centimeters every month, and drops out after three years.

Common hair problems

Split ends are common in long hair especially those frequently dried using hair driers. *Dandruff* is caused by the build-up of dead cells on a dry scalp. *Head lice* are tiny insects that live on people's scalps. They thrive on the scalp and even lay eggs sticking to the hair close to the scalp. Head lice infestation is common among school children who do not bathe regularly. Transmission of lice infestation is through direct head contact. Once infested with lice, children start scratching and may develop wounds on the scalp.

Care for the hair

Trim hair regularly. Dirt and oils should be removed frequently for a healthy and shiny hair appearance. Washing hair with shampoo at least twice a week removes oil and dirt. Shampoo hair daily if engaged in active and physical activities that cause excessive perspiration.

Rinse hair thoroughly. A second lather is not necessary because it might dry the hair. Experiment with shampoos to find the best one that suits hair type and need. Avoid hair products that contain strong chemicals. Use mild shampoo or any local hair wash such as gugo or mild soap. Remember to use a conditioner after shampooing. Conditioners coat the hair shaft making it appear shiny but would not repair split ends.

Massage scalp when washing hair to allow blood circulation on the surface of the skin. Use anti-dandruff shampoo when necessary, but be careful as they may be harsh on the scalp.

Reduce amount of heat used on hair if using a hair dryer. Towel dry hair or better yet allow it to dry naturally.

Avoid coloring and dying hair or using hair spray, because the chemicals used may cause dryness, brittleness and split ends, and may also cause allergic reactions or produce head wounds.

Use a comb instead of a hair brush on wet hair. Brushing wet hair may damage the hair shaft. Do not share combs, brushes, towels or pillows to prevent the spread of head lice. If infected, use medicated shampoo for head lice. Use a very fine comb (suyod) to comb out the eggs. The nits and eggs can be removed from the hair strands by hand. Do not use kerosene to remove head lice.

The feet

The feet carry the full weight of the body and keep a person upright. On the average, a person makes 15, 000 steps a day. Thus, it is but proper to take care of the feet.

Common foot problems

1. Feet can get smelly because the soles have more sweat glands than any other part of the body.
2. Plantar warts are also known as verrucae warts which occur on the soles of the feet. They are caused by a virus which could have been caught from someone else, particularly if barefoot.
3. Blisters are painful water-filled bumps caused by constant rubbing.
4. Ingrown toenails are nails which have grown into the skin of the toes. This results from wearing shoes and socks that are too restricting. Ingrown toenails are really painful and need immediate medical attention.
5. Athlete's foot is a fungal infection that grows between toes, making them itchy and smelly.
6. A callus is a thickened layer of skin caused by excess rubbing.
7. A corn is a growth that results from excessive rubbing of the shoe against the foot, or from toes being squeezed together.

Care for the feet

Give feet a regular airing by walking around in flip flops at home or whenever possible. Do not wear shoes for a long time because they may make your feet very hot and sweaty. Tight shoes can cause feet deformities among children and affect their walking and balance. Wear comfortable shoes of the appropriate size. In buying shoes, consider the following:

- Make sure the shoes do not rub against the big toe, or cut into the side or back of the ankle.
- The shoes should fit snugly across the widest part of the foot, without pinching.
- Do not choose shoes that are too loose because you may end up clenching your toes to keep the shoe from falling off. This would strain the muscles in the feet and can in corn and calluses.
- It is not advisable to buy shoes in the afternoon when feet are already swollen after a day of walking around.

Dry feet before wearing shoes. Wear clean cotton socks because they are the

best absorbents and could keep feet drier. Use talcum foot powder to help keep feet dry and odor free.

Warts eventually disappear by themselves but if they are causing large or painful lumps, go to a doctor, particularly to a Chiropodist to have them removed.

Like warts, calluses often heal even without treatment. Better to determine what caused the rubbing and stop it. Do not clip nor scrape calluses. These will only grow back. There is danger of clipping/ scraping too close to the skin, which will cause infections. Special pads can be used to relieve the pain that corns cause. If the corn doesn't heal, consult a doctor.

Blisters, on the other hand, need to be washed with soap and water. Smooth on an antiseptic and protect the blister with a gauze dressing. Do not break the blister as this may increase the risk of infection.

Cut toenails across to prevent ingrown toenails.

Athlete's foot can be avoided by keeping feet dry. If already afflicted, use special foot powder or cream to manage the itchiness and foul smell. Also consult a doctor.

THE SENSE ORGANS

The eyes, ears, nose, mouth, tongue and skin are special body parts. They work together to make us aware of our environment. They are responsible for sight, hearing, smell, taste and touch. These senses cannot be isolated from each other. Putting together each specific function allows the brain to provide a holistic meaning to the sensory experience.

The eyes

Working from the outside in, at the surface of the eye is the cornea, a transparent, soft layer that covers the delicate and complex layers of the eye. Damage to the cornea will impair vision, but it is also one of the fastest healing parts of the body. Underneath the cornea is the sclera, or white of the eye, along with the iris and pupil. The iris is the colored portion of the eye, while the pupil is the dark area in the middle of

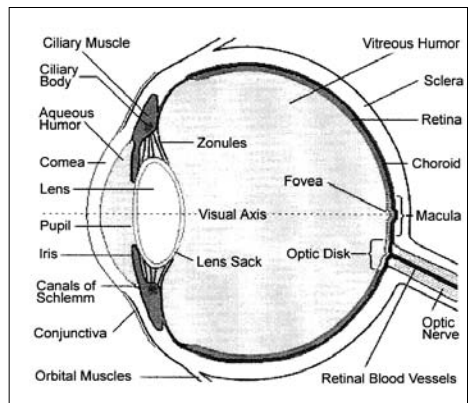


Figure 9. The eye

the iris or the central opening of the iris. The pupil expands and contracts to admit light to the back of the eye.

Behind the iris and pupil is the lens. The lens of the eye focuses light, directing it through the vitreous humor to the retina. The vitreous humor is a viscous fluid that fills the space between the front and back of the eye, protecting the delicate optic nerve and retina in the back of the eye and helping the eye to retain its shape. The retina is the light sensitive area in the back of the eye, which is equipped with several structures that help translate the light focused through the lens into an image.

The eyes are one of the best indicators of health. They are also one of the most delicate organs in the body that need undivided attention. But the body has its own ways to protect eyes. For instance, when something gets into the eye, it automatically creates tears to wash away the foreign body. Eyelashes and eyebrows keep out specks of dust, dirt and even insects.

Common Eye Problems

Eye and vision problems can only be detected during regular eye examinations. The earlier the problem is detected, the higher the possibility of finding solutions, treatment and management of the problems.

Refractive errors are the most common eye problems that impair visual acuity and are generally easy to correct. Refractive errors are basically defects in the shape of eye structures that result in the inability to focus on the retina and interfere with vision acuity.

1. Myopia (nearsightedness) – distant objects appear fuzzy
2. Hyperopia (farsightedness) – nearby objects are blurred
3. Astigmatism – irregular curvature of the cornea resulting in blurred vision
4. Presbyopia – impaired ability to change focus as a result of weakened eye muscles and the rigidity of the lens

The first three could be corrected by eyeglasses. The difficulty is in detecting the presence of these problems because children do not necessarily know that there is something wrong with their vision.

The Snellen Chart is used to check vision. It is a rectangular poster made to stand on its length, with letters that are printed in different sizes and organized in eight 8 to 10 lines. The Snellen Chart is also used to screen for color blindness. The person being tested is asked to name the two color bars that appear on the chart.

Color blindness is a condition occurring in a person who has difficulty per-

ceiving some of the colors that are normally seen by others. It was initially thought to be an X-linked trait, that is, a condition that can only be passed on from the mother to a son. However, new information shows that there are a lot of other inherited or genetic diseases that cause color blindness. In addition to genetic transmission, color blindness can be due to injury to the eye, nerve or brain, or due to exposure to certain chemicals.

There is still no treatment or cure for color blindness, but there are now tinted filters and contact lenses that help affected people distinguish between different colors.

Eye strain develops when a person is intensely concentrating on a visual activity like reading or working with computers. In these situations, the inner muscles of the eyes tighten causing the discomfort and sometimes irritation of the eyes. It does not, however, cause a decrease in the visual acuity of a person. Letting the eyes focus on a distant object relieves the strain.

Conjunctivitis, more commonly known as sore eyes, is bacterial infection causing inflammation of the membrane lining the eyelids. It is highly contagious but rarely serious, unless infection sets in. Conjunctivitis causes swelling, redness and tearing. One gets a gritty feeling in the eyes and the eyelids stick together upon waking from sleep.

Trachoma is a more serious infection of the conjunctiva. It starts with red, watery eyes just like conjunctivitis. After a month or so, small pinkish-gray lumps, called follicles, form inside the upper lids. After several years, the follicles begin to disappear, leaving whitish scars that make the upper eye lid droop. The drooping eyelid prevents the eyes from opening and can cause the eyelashes to scratch the cornea and cause blindness. Early detection and treatment are important to prevent blindness.

Night blindness or the inability to see in the dark is an early sign of possible permanent blindness due to Vitamin A deficiency.

“Banlag” is *exotropia* or divergent eyes; one or both eyes are looking outwardly. “Duling” is *esotropia* or convergent eyes, commonly known as cross-eyed. These are due to developmental abnormalities of the eye muscles. In young children, these can be easily remedied by having the child wear a patch over the good eye to force the “weak” eye to look straight.

Cataract is the clouding of the lens of the eyes that obstructs vision and can lead to blindness.

Glaucoma is caused when excess fluids build up inside the eye, thus, putting pressure on the eye lens and optic nerve and can cause blindness.

A *sty* (kuliti) is an acute infection or inflammation of the secretory glands of the eyelids. This common infection or inflammation results from blocked glands within the eyelid. Frequently, bacteria can infect the blocked gland, causing increased inflammation, pain and redness of the eye and even redness of the surrounding eyelid and cheek tissue. The blocked gland forms a lump that has a visible whitish or yellowish spot. The lump frequently goes away when the blockage of the gland opening is relieved. Furthermore, the infection goes away when the pus is drained from the sty. Most styes go away on their own in 5-7 days. Keep eyes closed while applying warm compresses 4-6 times a day for about 15 minutes at a time to help the drainage. Do not squeeze or puncture the sty. A more serious infection may occur as a result. Discontinue the use of eye makeup as well as eye lotions and creams because they may infect the eye. Discontinue wearing contact lenses because the sty may cause an infection to spread to your cornea.

Care for the eyes

Young people ages five to 15 should have their eyes examined every 18 months to two years. Tests include testing for vision acuity, nearsightedness, farsightedness, astigmatism, color perception, lazy eye, crossed eye, eye coordination, depth perception, focusing ability and general eye health. From ages 19 to 40, eye examinations are only needed if a person experiences symptoms of eye problems. From age 40 to 60, eye examinations should be done every two years and this includes testing for glaucoma.

Children must learn that good nutrition and cleanliness keep the eyes healthy and can prevent blindness and infections. When the white part of the eye is clear and the eyes seem to shine, then the eyes are healthy.

If a speck of dirt gets into the eye, avoid rubbing as this may damage the lining of the eyes. Blinking can help to remove the small particles from the eyes. Dip face in a basin of water and blink under water to remove foreign particles. Another method is to have someone slowly pour water from a water scooper (tabo) so that water would run down the eyes. If none of these measures help, consult a doctor.

Children should not play with pointed sticks or sharp objects.

Harmful solutions should be kept out of the reach of children. Avoid using over-the-counter eye drops to cleanse the eyes. The normal secretion of the conjunctiva serves to lubricate and protect the eyes. Avoid touching or rubbing the eyes especially with dirty hands.

Do not let a child with infectious eye disease such as conjunctivitis sleep or play or share personal things with others. Wash hands frequently especially before touching the eye to help prevent the infection from spreading.

Wear eyeglasses or contact lenses if they are prescribed by medical specialists. Wear safety eyeglasses if you are engaging in sports that may be risky for your eyes. Avoid activities that may pose danger to the eyes.

Avoid eye strain by watching at least six feet away from the television. Do not read in a moving vehicle. Rest your eyes from time to time by shutting them for a couple of minutes and or by staring at green and blue things. When using a computer for prolonged periods, make sure to rest the eyes at least once every hour by looking at other things.

Trachoma is usually found in communities where the living conditions are poor and the water supply inadequate. To prevent the spread of trachoma, strict personal hygiene should be observed such as bathing and washing the face and hands and using one's own towel and clothing.

Use dark colored glasses to protect eyes from strong sunlight.

To prevent blindness, children must be encouraged to eat food rich in vitamin A. Green leafy vegetables and red and yellow fruits are good sources of vitamin A. The Department of Health has a vitamin A supplementary program focusing on women and children under five years old and has launched several campaigns to fortify commercial food with vitamin A. Some processed food such as certain brands of margarine, fruit juice and noodles are enriched with vitamin A.

Suspected cataracts or glaucoma should be immediately referred to an ophthalmologist. Eye surgery is normally recommended for cataracts.

The ears

It is through hearing that people gain additional knowledge and information. The ears act as receivers, picking up vibrations and sound waves and passing information relayed by them to the brain.

The ear has three main parts: the outer ear, middle ear and the inner ear. Each part plays an important role in transmitting information to the brain.

The outer ear is part of the ear that collects sound waves. The part that we see is called the auricle.

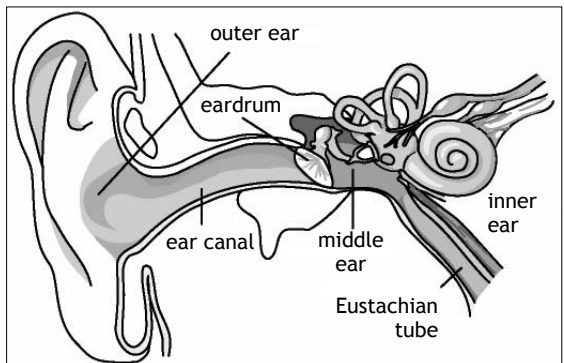


Figure 10. The ear

The middle ear consists of the eardrum (where sound waves vibrate) and three small bones namely the hammer, anvil and stirrup. These bones carry vibrations to the oval window where the Eustachian tube is located.

The inner ear sends messages to the brain. It is also the inner ear that helps us keep a sense of balance. This is possible through the semi-circular canals containing a special fluid and tiny hairs that are connected to nerve endings. These tiny hairs send messages to the brain. Thus, the brain interprets movements and helps keep balance.

The Eustachian tube connects the middle ear with the back of the throat. It helps keep the air pressure on both sides of the eardrum equal. Most of the time it is closed. Swallowing or coughing relieves air pressure when the air pressure in the outer ear is different from that in the middle.

Common ear problems

Children who have *hearing difficulty* may try to hide in the corner of the classroom so as not to be noticed. They usually turn the head to one side to listen, talk loudly or in a monotone, fail to respond to questions, and report dizziness, earache or ringing in the ear. Those who have serious hearing difficulty do not even learn to talk or understand others talk.

Swimmer's ear is a painful and itchy bacterial infection of the external ear canal that develops after long periods of swimming or bathing.

Hearing loss ranges from mild to profound deafness. This may be caused by drug use, middle ear infections, high fever, trauma in the ears and exposure to loud sounds. Conductive hearing loss is faulty transportation of sound from the outer ear to the inner ear. This condition might be caused by excessive earwax build up, middle ear infection or damage to the middle ear structures. When the sounds that reach the inner ear fail to be transmitted to the acoustic nerve which connects the inner ear to the brain, then the child may have sensorineural hearing loss.

Chronic otitis media, or fluid in the middle ear, is the most common cause of hearing deficit in the early school years. The fluid may be present for long periods and may become thick, making it difficult for the eardrum and the small bones in the middle ear to function properly. Severe middle ear infections may also cause the eardrum to rupture and may lead to hearing loss. Exposure to loud noises can also cause permanent hearing loss.

Care for the ears

The ear has a natural way of removing the cerumen or wax inside the canal. The ear wax can either be wet or dry; this is genetically pre-determined. There is really no need to use a cotton bud to scrape the wax out of the

ear canal. Inserting it all the way inside the canal can cause trauma or even damage the ear drum. Its use should be limited to cleaning the outer ear. Likewise, other objects like matchsticks, feathers, hairpins, toothpicks should not be used for cleaning the ears. If a foreign body accidentally gets into the ear, consult a health professional immediately to remove it.

When symptoms like ear pain, ear discharge or ringing of the ear are noted, one should immediately consult a health professional. Sometimes, the ear wax can completely block the ear canal and cause a reduction in the hearing acuity. When this happens, it is also advisable to consult a health care provider. Self-treatment like the use of hydrogen peroxide (Agua oxinada) can be harmful.

Wear earplugs when in noisy and crowded places as well as when swimming for long periods to prevent ear infection. After bathing or swimming, the ear should be gently and thoroughly dried.

Consult a medical specialist whenever your ear catches an infection. Stay away from people with flu.

Avoid loud noises as these can cause hearing loss. Do not allow any one to shout into your ears. Keep the volume of television, radio and MP3 players at a safe level. Better yet, use headphones instead of earphones. Protect the ears from blows.

Symptoms such as pain, swelling, drainage or impaired hearing should be promptly referred to a doctor. Early detection of hearing loss is important. Periodic hearing evaluation should be done in school. The school nurse should be more suspicious of possible hearing difficulty among children with a story of recurrent ear infections.

Children with conductive hearing loss can be given hearing aids or corrective surgery to restore hearing. Children with sensorineural hearing loss need more attention and care so that they will not lag behind in their social and mental development.

Children should undergo hearing screening tests as part of the annual health examination

The nose

The sense of smell is transmitted directly to the olfactory bulb of the cerebral cortex (part of the brain). The upper third of the external cavity of the nose is bone and the rest is cartilage. The nasal cavity is divided into two narrow cavities by the septum. The opening passage is thickly lined with small hairs. The small hairs filter and moisten the air that passes through the nose. Blood

vessels are located in the outer lining (mucosa) of the nasal septum, which is the common site for nose bleeding. The paranasal sinuses (found around the nose area) are air-filled cavities that makes the skull lighter. When clogged, these sinuses can be painful and cause headaches (sinusitis).

Common nose problems.

Children usually suffer from stuffy or runny nose because of the *common cold* or *respiratory allergy*. The overproduction of mucus can cause *sinusitis* (inflamed sinuses) or *rhinitis* (inflamed nasal cavity), which gives one terrible headaches. A lot of mucus in the nose can also cause ear infection. This is because the mucus pathway in the nose is connected to the ears. When children blow their nose too hard, earache or sinus infection can develop.

Care for the nose

Be careful not to cause trauma to the nose by observing safety precautions at all times. Avoid picking the nose as this might cause the skin to break, which might also lead to infections.

In case of a nose bleed the patient should pinch the nose closed, assume a chin-up position and apply cold compress over the nose bridge. Excessive bleeding should be referred to the doctor.

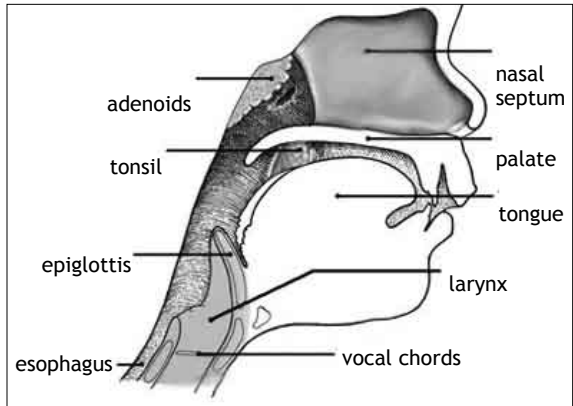


Figure 11. The nose and mouth

Drink plenty of fluids, especially when afflicted with the common cold. Blow the nose with utmost care. This is important because the mucus pathway in the nose is connected to the ears. Blowing the nose too hard may cause earache or sinus infection. Wipe runny nose gently with a soft cloth or tissue paper.

Boost the immune system by having enough rest and drinking lots of fluids such as water and fruit juices to build up resistance against microorganisms like cold virus.

Do steam inhalation for a stuffy congested nose. This is important to loosen the secretions and relieve the clogged nose. Children should be supervised when doing this to prevent burns.

The mouth

The mouth is an important part of the digestive and the respiratory systems of the body. The mouth is used for breathing especially when the nose is clogged or obstructed. Taste buds are located beneath the tongue. They have pores connected to the exposed (external) surface of the tongue. Food molecules start to dissolve in saliva. This in turn interacts with the taste buds, stimulating nerve endings that send messages to the brain for interpretation of the different tastes.

The notion that the tongue is mapped into four areas—sweet, sour, salty and bitter—is wrong. Only in recent years have taste receptors been identified. There are even taste buds in the palate and surrounding tissues in the mouth. One of the first breakthroughs in taste research came in 1974 with the realization that the tongue map was essentially a century-old misunderstanding that no one challenged.

Furthermore, a good smile is attributed to having a healthy set of teeth. Do not take the teeth for granted because neglected teeth decay, fall out and need to be replaced with false ones. The gums also need to be protected.

The teeth give the shape of the face, aid in digestion, facilitate speech and help build self-confidence.

“Baby teeth” are completed at age two. These are later on replaced with 32 permanent teeth. There are four types of teeth with specific functions:

- » Incisors are the eight teeth in the front and center of the mouth. They are flat with sharp edges that are used to cut food.
- » Cuspids are the four teeth in the corners of the mouth. They have long, heavy roots and a pointed cusp. They are used to tear food.
- » Bicuspid are the eight teeth found at the back of the cuspids with two cusps and one or two roots. They are used to crush food.
- » Molars are the twelve teeth that are at the back of the mouth with several cusps and two to three roots. They are used to

Brushing teeth:

- Brush teeth at least twice a day and ideally after every meal, using fluoride-containing toothpaste.
- Use only a pea-sized amount of toothpaste,
- Use a soft-bristled toothbrush – it’s gentler on gums.
- Proper teeth brushing uses circular motions not side to side. This motion also massages the gums, keeping them healthy.
- Brush the inside and chewing surfaces of your teeth.
- Brush teeth for about two minutes each time.
- Brush the tongue.
- Avoid vigorous or harsh scrubbing, which can irritate gums.
- Rinsing is not necessary.
- Floss in between teeth.
- Replace toothbrush every three or four months, or sooner if it becomes frayed.

grind food.

Do not think that baby teeth are not important. Do not leave them to decay in the thought that “they will be replaced anyway.” Decay of the milk teeth indicates that the child is susceptible to tooth decay and requires proper attention to maintain a healthy dentition.

If a milk tooth is lost for any reason much earlier than the scheduled time of eruption of the permanent successor, then it is very likely that the space created by loss of the milk tooth will reduce or even close due to drifting of the adjacent teeth. When the time for the permanent tooth to erupt comes it may have no place, so it may either get locked within the jaws or erupt in an abnormal position. As a broad guideline, by following conservative treatment procedures, all attempts should be made to avoid removal of the front milk teeth before the age of 4 years, and the other milk teeth before the age of 9 years.

Common mouth problems

Most common ailments of the mouth involve the teeth and gums.

Toothache is a pain that comes from the root or gums. It may be caused by plaque, tartar or dental carries.

Plaque is the milky white substance that forms in between teeth or at the bottom of the teeth. When plaque is not removed daily, it hardens into deposits called tartar that collects under the gum line. Only professional cleaning by a dentist can remove tartar. If neglected, plaque and tartar will irritate gums, making them red, swollen and prone to bleeding. This condition is known as gingivitis. If neglected or untreated, gingivitis lead to later stage of disease, known as periodontitis.

In *periodontitis*, periodontal pockets form between teeth and gums. These pockets are filled with bacteria and later with pus, If periodontitis is not treated, the bone supporting the tooth is destroyed. The teeth begin to loosen, eventually they fall off or must be extracted.

Malocclusion is the abnormal fitting together of teeth when the jaws are closed. It may be caused by heredity, jaw size, early loss of permanent teeth and/or from injury to the teeth.

Another common ailment that bothers quite a number of children and adolescents is *bad breath*. Bad breath is usually caused by intake of smelly food like garlic, onion or *bagoong*. That is why it is important to brush teeth after eating. In more severe cases, bad breath does not disappear even after brushing and gargling with a mouthwash. This is indicative of a more serious

problem in the digestive tract, and not just the mouth area. More often than not, the odor is not the smell of food, but of bile (slightly sour and acidic). Anyone suffering from this type of bad breath also usually complains of having an acidic stomach, and tasting sourness after eating. If this is the case, immediately consult a doctor for proper treatment. Do not self medicate.

Care for the mouth

The mouth should be kept clean and healthy since food is taken and chewed in the mouth before it moves down to the gastro-intestinal tract.

Brush teeth twice a day to prevent plaque, tartar and dental carries. Remember it is easier to remove plaque than tartar. Floss every after brushing. Do not forget to gargle. Use toothpaste with fluoride to help strengthen your teeth.

The use of fluoride-containing toothpaste is not necessary until the child is about 2 years old. Earlier use can cause excessive fluoride to be deposited in the teeth causing white spots or pitting of the enamel.

When it is time to use a fluoride-containing toothpaste, all that is needed is a pea-sized film at the tip of the toothbrush. It is not necessary to fill the whole length of the toothbrush. The child can then brush his/ her teeth in up-down and circular motions. Excess toothpaste and saliva can then be spit. There is no need to rinse the mouth. This has been found to be more effective in absorbing the fluoride and subsequently protecting the teeth from caries.

Where toothbrushes are not available, fray the ends of a small twig from a guava tree to use as an improvised toothbrush. The antiseptic properties of the guava bark are especially beneficial. Salt or baking soda can also be used as a substitute for toothpaste. A small pinch of either product in a glass of water can be used as a gargle when brushing teeth.

Avoid taking food that is too hot or too cold as it may damage the taste buds and may cause burns. Avoid eating too much sweets (not only sweets but food in between meals).

Drink plenty of water after eating. Eat food rich in calcium and not in sugar. Observe regular oral-prophylaxis. Avoid rough games and sports like boxing and taekwondo that might pose a danger to teeth. If these activities cannot be avoided always wear a mouth guard. Do not open bottled drinks using your teeth.

Apply braces to correct the malocclusion. This is to correct the alignment of the teeth. After the braces, a retainer is usually worn to keep the teeth from

moving back to their original places.

Follow a dental health plan consisting of proper tooth brushing, flossing and visiting the dentist regularly.

The Skin

The skin is the largest organ of the body. It is made up of water proof wrapping that is elastic enough to allow movement in every direction. It regulates body temperature, protects the body from heat, cold, wind and dirt, protects the body from invasion of microbial agents and ultra-violet rays from the sun, serves as sensory by relaying messages from the environment to the brain and helps eliminate toxins and wastes from the body through perspiration.

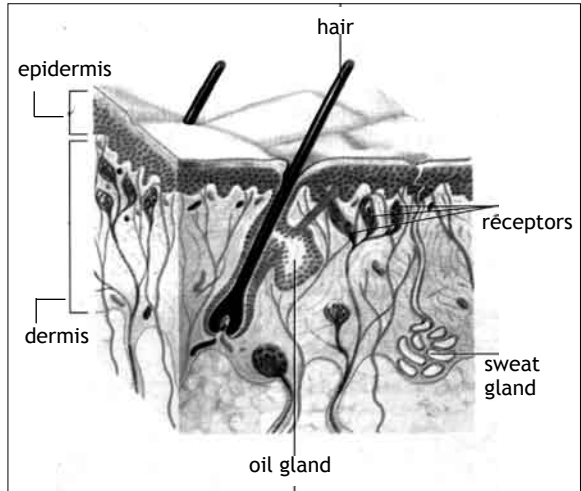


Figure 12. The skin

The skin is made up of two main layers – the epidermis (outer layer) and the dermis (inner layer). A third layer of fatty tissue holds the skin together. The outer part of the epidermis that comes into contact with the environment consists of dead skin cells, while the inner part is made up of living cells that continuously divide and supply new skin cells. The dermis consists of a tough and elastic layer, which constantly received nutrients from the nerves and blood vessels. Skin pores from the sweat glands help regulate temperature and get rid of waste. The skin is kept supple by oil secreted by sebaceous glands.

The skin is the first line of defense against invasion of bacteria and foreign substances and against slight physical trauma, heat and rays. The skin protects the body from germs and ultraviolet rays from the sun. It helps eliminate waste from the body through perspiration and helps regulate body temperature.

Common ailments

Children are prone to *prickly heat* (bungang araw), ringworm and scabies. Some skin problems are signs of diseases that affects the whole body such as rashes from measles, chicken pox, allergies or pellagra, which is a sign of malnutrition. Certain skin problems are signs of serious diseases such as

syphilis or leprosy.

Scabies (galis aso) is a contagious itch caused by mites (minute parasitic insects) that burrow under the skin and suck blood. Itchy little bumps can appear all over the body, between fingers, on the wrists, around the waist and on the genitals.

Ringworm is a very itchy fungal infection that grows in the form of a ring. It appears most frequently on the scalp, body parts without hair, between fingers and toes and between the legs.

Rashes from measles or chicken pox are accompanied by other symptoms such as fever, difficulty of breathing that make management more difficult. Skin problems due to viral illnesses are usually self-limiting unless complications occur.

Pellagra is a form of malnutrition that affects the skin and sometimes the digestive and nervous system. It is very common among people who eat a lot of starchy food but not enough body-building and body-regulating vitamin B-rich food such as meat, beans, fruits and vegetables. Dark marks similar to bruises, or even peeling sores, appear on the arms and legs. Aside from the skin problem, other signs of malnutrition such as a swollen belly, mouth sores, weakness and failure to gain weight are seen.

Another common skin problem is *small sores with pus*. They are usually due to infected insect bites (by fleas, bed bugs, etc.) or other irritations.

For teenagers or pre-adolescents, *body odor* is a pressing issue. Sweat or perspiration itself has no odor. Body odor results when bacteria found on the skin decompose and interact with perspiration. Thus, in order to control body odor, it is important to keep the skin clean through washing.

Acne, also known as pimples, is a skin disorder characterized by the inflammation of the glands and the hair follicles. This happens when the sebum from a sebaceous gland that normally drains into a hair follicle and then gets out through an open pore in the surface of the skin is blocked. The blocked pore forms a black head or a white head. Blackheads are caused by an excess of sebum in the pores. When the sebum reaches the surface of your skin, it hardens to a small, dark head. Whiteheads start off as small sweat spot. It is a plug of sebum that has not been exposed to air because it is still covered with a layer of keratin from the surrounding skin.

When bacteria breed in the trapped oil, it will result to inflammation. This inflamed red spot is called acne. Severe cases of acne can leave the face permanently scarred. This is most common in teens and its psycho-

logical effects are stern due to the embarrassment it creates.

Allergic reactions show up as rashes or dry patches on the skin. They may be due to intake of a certain type of food or medicine, or the application of cosmetics, ointments or lotions on the skin.

Eczema is a group of skin conditions that cause skin to become red, irritated, itchy, and sometimes develop small, fluid-filled bumps that become moist and ooze. There are many forms of eczema, but atopic eczema or dermatitis is one of the most common and severe types. Eczema isn't contagious like a cold, but most people with eczema have family members with the condition. Researchers think it's inherited. In general, eczema is fairly common—approximately one in 10 people in the world will be affected by it at some point in their lives.

People with atopic eczema also may have asthma and certain allergies. For some, food allergies (such as allergies to cow's milk, soy, eggs, fish or wheat) may bring on or worsen eczema. Allergies to animal dander, rough fabrics and dust may also trigger the condition in some people. It can be difficult to avoid all the triggers, or irritants, that may cause or worsen eczema flare-ups. In many people, the itchy patches of eczema usually appear where the elbow bends; on the backs of the knees, ankles and wrists, and on the face, neck and upper chest—although any part of the body can be affected.

In an eczema flare-up, skin may feel hot and itchy at first. Scratching may cause redness, inflammation or blisters. Some people who have eczema scratch their skin so much it becomes almost leathery in texture. Others find that their skin becomes extremely dry and scaly. Even though many people have eczema, the symptoms can vary quite a bit from person to person.

Psoriasis is a common and chronic skin disorder. The most common type of psoriasis is characterized by red skin covered with silvery scales and inflammation. Patches of circular to oval shaped red plaques that itch or burn are also typical. These are usually found on the arms, legs, trunk or scalp but may be found on any part of the skin. The most typical areas are the knees and elbows.

Psoriasis is not contagious but can be inherited. Research indicates that the disease may result from a disorder in the immune system. Factors such as smoking, sun exposure, alcoholism and HIV infection may affect how often the psoriasis occurs and how long the flare ups last. Psoriasis affects children and adults. Men and woman are affected equally.

Vitiligo (vit-ill-EYE-go) is a pigmentation disorder in which melanocytes

(the cells that make pigment) in the skin are absent. As a result, white patches appear on the skin in different parts of the body. Similar patches also appear on both the mucous membranes (tissues that line the inside of the mouth and nose), and the retina. The hair that grows on areas affected by vitiligo sometimes turns white.

The cause of vitiligo is not known, but doctors and researchers have several different theories. The most widely accepted view is that the depigmentation occurs because vitiligo is an autoimmune disease—a disease in which a person's immune system reacts against the body's own organs or tissues. As such, people's bodies produce proteins called cytokines that alter their pigment-producing cells and cause these cells to die.

Care for the skin

Clean the skin daily with soap and water to remove bacteria, oil, perspiration and dirt. See to it that soap is thoroughly rinsed off with adequate amount of water. Having clean skin includes having clean and trimmed fingernails and toenails.

The simple act of hand washing prevents a myriad of diseases. Infectious diseases that are commonly spread through hand-to-hand contact include the common cold, flu, intestinal parasites, bird flu, conjunctivitis and several gastrointestinal disorders, such as infectious diarrhea. Inadequate hand hygiene also contributes to food-related illnesses, such as salmonella and E. coli infection.

Avoid using facial and body cleansers, skin whitening products, skin exfoliants or skin peels. The harmful chemicals in these products may produce allergies or even cause minor burns. Instead, eat food rich in vitamins C and E.

Use a deodorant after bathing to reduce the amount of body odor. Do not apply deodorant or anti-perspirants on inflamed or broken skin or immediately after shaving.

Do not scrub skin. Acne is not caused by dirt, and excessive rubbing often worsens the condition. Use lukewarm water to wash the face. This will open the pores to clean deep seated dirt. Use cool water for rinsing to close pores preventing dirt from entering. Avoid using harsh and abrasive soaps. Using a clean towel, pat skin gently to dry.

Avoid touching, picking, squeezing pimples or acne because these practices will irritate the acne and may result in spreading to the other areas of the face and body. Use cosmetics sparingly. Choose cosmetics that are

hypo-allergenic. Know the type of your skin and use products suitable for your skin type. Consult a dermatologist before using any medical products on the skin.

Be watchful of food intake especially if there is a history of allergies in the family. Identify food that cause allergies refrain from eating them. Use only hypo-allergenic products—soap, cosmetics, lotions—on the skin. Stay away from allergens.

Protect skin from exposure to ultraviolet rays from strong sunlight. Use sunblock with high sun-protective factor when working or playing under the sun. Do not forget to put sunblock on top of the head if it is shaved.

Moles are patches of melanin that may be flat or raised and at times hair is seen growing in the area. Moles are normal and need not be removed nor even paid attention to. However, monitor larger moles to see if they bleed, change color, size or shape. If this happens, consult a doctor.

Scabies is spread through contact with infected persons or by sharing clothes and beddings. Do not scratch to prevent infection, which is characterized by sores and pus, and sometimes by swollen lymph nodes and fever. Observe proper personal hygiene and good grooming. Juice from the leaves of Acapulco may be applied directly to the skin.

Ringworm and other fungal infections are contagious. Do not let an infected child come in close contact with other children or share personal things and clothing with others. Wash the infected parts with soap and water daily. Apply salicylic acid or juice from Acapulco leaves to the affected parts.

For rashes, bathe the child daily with mild soap and warm water and apply cool cloths to relieve itching. Do not put ice directly on the skin. Instead, wrap ice with a towel before applying on the skin to relieve itching. To prevent the development of sores with pus, do not scratch itchy insect bites or scabs. Instead, wash with mild soap and boiled water. Bandaging large areas of sores also helps prevent infections.

Eating nutritious food cures pellagra. An infected child or adult must be encouraged to eat a more balanced meal.

For minor burns (*paso*), hold the affected area under cool running water for around 20 minutes. Do not apply ice. Do not apply toothpaste, as the menthol in most toothpastes will aggravate the burn.

PHYSICAL EXAMINATION

Physical examination is a series of tests that measures one's health status. The doctor notes the general appearance of the patient—eyes, ears, nose, mouth and lips. It includes recording of height and weight. The physician will also check the pulse rate, blood pressure and listen to the lungs and heart.

The physician often presses on the lymph nodes and abdomen to check if there are potential problems to watch out for. The legs and feet will also be subjected to some tests to see the way they react.

At times, the doctor may require laboratory tests to check urine and blood samples.

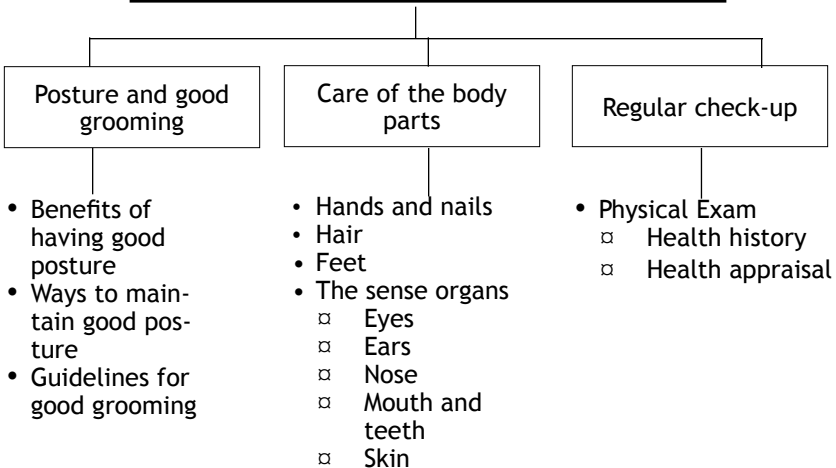
It is of great importance to have regular check ups and prompt medical care because this means early diagnosis and treatment of related health problems. As the adage goes: “an ounce of prevention is worth more than a pound of cure.”

Health history

Part of the physical examination is taking the health history of the patient. This is a questionnaire that aims to gather information pertaining to the patient's lifestyle, past health conditions, past medical care, health habits, allergies as well as the patient's family's medical health history.

It is essential to have an accurate health history because this enables the physician to deliver quality patient-care. This is the very reason why people should constantly update their personal health management plan.

FRAMEWORK FOR PERSONAL HEALTH



CHAPTER 4

MENTAL HEALTH

The chapter on Mental Health has two parts. The first part is lifted from the *Teaching health and wellness – a source book for Teachers for Grades 1-6* generally covering the section on psychosocial development. These excerpts are from the section on emotional and psychosocial health of all the grade level source books.

The second part provides additional notes on self-esteem and the promotion of resiliency among students. Additional sections on two common concerns in the school are included: management of anger and the problem of bullying. A significant part deals with red flags that should alert the teachers to possibly more serious problems that a child or adolescent is facing. This is discussed in the context of the Child's Rights to development and protection.

BUILDING RELATIONSHIPS

Children about to enter school either look forward to it or dread it. Some of the children are excited and proud of their new uniforms, shoes, bags, notebooks, etc. Some experience separation anxiety from their parents or siblings or are simply terrified of the new surroundings. Grade 1 teachers should therefore be non-threatening and extra friendly. The child's first impressions of school might affect his/ her attitudes towards schooling.

The school is a second home for the child. It becomes a very important place where s/he learns not only new concepts, but also about new relationships with the teacher, classmates and other people in school. The child's ability to adjust to his/her new surroundings indicates the level of security s/he has in his/her family. Family relationships are very important to a person's psychosocial and emotional stability. School relationships also serve to fill in the gaps in the relationships at home.

Being the second home, the school also makes a big impact on the emotion-

al and psychosocial well-being of children. Establishing relationships with the teacher and classmates is one of the important tasks in school.

The child's focus of attention and desire for socialization shift from the immediate family to his/her teachers and classmates. The child develops new friends who can help fulfill his/her needs for affection and belongingness. The peer group now begins to influence habits, likes and dislikes and even speech patterns. New standards of behavior and performance can also be influenced by the peer group. Children learn values, behaviors and attitudes from their peer group, as they did from their families.

Making friends is one of the important events in the socialization process of young children. When the child enters school, friends are likely to be chosen based on specific acts or behaviors that the child identifies as pleasant or good. Group participation teaches the value of cooperating with others. Through group interaction, children learn to express themselves. Knowledge and acceptance of the child's position or place within the group of peers can enhance or diminish his/her sense of worth, productivity and achievement.

COGNITIVE AND PSYCHOSOCIAL DEVELOPMENT

The psychosocial development of a child is related to his/her physical development. [*Refer to Chapter 1 Growth and Development for developmental milestones.*] As school children grow older, they learn to play with more children. As early as seven years old, a child can be a member of a peer group, which can at times replace the family in teaching attitudes. The role of the teacher is to recognize appropriate behaviors and attitudes which should be developed.

Socialization with peer groups takes on a more significant meaning among school children. Most of them prefer to be with their classmates than with the family. Parents can sometimes be heard complaining that their children seem to be more interested in school activities than in the chores at home, or are more involved with classmates than with family members. Teachers must be able to explain that building relationships with peers is very important among school children since it adds to their self worth and respect and regard for others. Children find out how similar and different they are from their peers. They also learn to share their experiences and interests with others. They learn about social behavior and gain understanding of what is acceptable and unacceptable behavior.

At this stage in the child's development, school activities focusing on socialization can be very helpful in promoting the emotional and psychosocial well-being of children. One important aspect of socialization is communicating thoughts and feelings. By learning how to communicate, children are

able to express their own concerns, desires and ambitions. Children can be encouraged to express themselves by having them participate in visual arts or performing arts. Communicating well also means building relationships with others. Schools can help foster these relationships by organizing school camps, team sports or small parties. Children must be taught early about the concept of teamwork and spirit of sportsmanship.

Children need cognitive activities to foster their intellectual development. This intellectual development influences their emotional and psychological health since it increases awareness of self-worth. Children need a little challenge every now and then to make them achievers in life. Whether the challenge is more cognitive in nature than physical, it leaves a mark on the child's emotional and psychosocial well-being, especially if the experience has been very rewarding.

Children should be encouraged to read books. There are many books that children can learn from as well as enjoy. In addition to the usual fairy tale books and books written by foreign authors, teachers should note that there is a growing collection of children's literature written by Filipino authors.

Watching television needs to be carefully monitored. Children must be taught to balance their television fare and avoid violent and late night programs. The professional recommendation is to limit TV viewing to one to two hours in a day. Parents should make the decision whether or not to let their children watch TV, especially on class days.

In this age of computers and the internet, teachers should also work with parents and guardians in setting guidelines and limits in playing with video and computer games. Here are some tips in controlling video and computer games that can be shared with parents and guardians:

- Emphasize that school work always takes priority over video or computer games. Parents or guardians also have the option of deciding not to allow video or computer games during school days.
- Once school work is completed during the weekday or weekend, children can be allowed to play, but time limits should still be set.
- Games can be controlled by either keeping the controllers (joy sticks or remotes), for those who own a family computer or by limiting the amount that a child or teen can spend on computer gaming in internet shops.
- Encourage other activities so that children and adolescents do not solely play video or computer games. Interactive activities with the family, whether indoors or outdoors, are recommended.

Note that all these suggestions require the involvement of the parent or guardian. Parental supervision at all stages of a child's development is vital.

Parents or guardians need to be keen and interested in what their children and adolescents are doing. While being genuinely inquisitive on what they do, parents and guardians should also listen attentively to what they say. Establishing communication and modeling it with children and adolescents in the family and extending into the school setting is important. It is life-long skill that will serve them well.

Promoting the psychosocial health of school children can be adequately addressed by focusing on their social and cognitive activities. In all these activities, children should be given well-deserved praise and encouragement and should be allowed self-expression to encourage self-worth and positive regards for others.

To help children and adolescents through the different stages of development, teachers are also encouraged to consult the standard references developed by Erik Erickson and Jean Piaget. A brief summary is shown below.

Erickson's Stages of Psychosocial Development. In parentheses are the challenges confronted during the stage.

- Infancy (Trust vs. Mistrust)
- Toddler Years (Autonomy vs. Doubt)
- Pre-school Years (Initiative vs. Guilt)
- School-age Years (Industry vs. Inferiority)
- Adolescence (Identity vs. Role Confusion)
- Young Adulthood (Intimacy vs. Isolation)
- Middle Adulthood (Generativity vs. Stagnation)
- Late Adulthood (Integrity vs. Despair)

Piaget's Stages of Cognitive Development

- Sensorimotor Stage (from birth to 2 years)
- Preoperational Stage (from 2 to 7 years)
- Concrete Operational Stage (from 7 to 11 years)
- Formal Operational Stage (from 11 years old)

PROMOTING SELF-ESTEEM

It is important for teachers to recognize that self-esteem plays an important role in a child or teen's academic and physical abilities, relationships and resiliency. Positive self-esteem correlates with behaviors that avoid risks and promotes health and safety. Children or teens are confident and are not afraid to fail. They can also quickly recover from disappointments or difficulties. On the other hand, low self-esteem is known to be associated with loneliness, resentment, irritability, depression, anxiety, drug use and eating disorders.

Teachers need to work with parents in promoting a child and teen's self-es-

teem. The following habits help develop self-esteem in a child or teen; they can be communicated to parents:

- Warm and nurturing parents or home care providers manifested in the time they spent with their children; physical expressions of love (e.g. hugs and kisses); and participation in a child or teen's activities
- Parents or home care providers that spend time listening to children and teens, rather than lecturing to them all the time
- Parents or home care providers that have reasonable and realistic expectations on their child or teen. They are neither overly critical nor uninvolved with their child or teen.
- Parents or home care providers that acknowledge a child or teen's accomplishments and his/ her progress to reach a goal. Sports, arts, music and academics provide opportunities and challenges.
- Parents or home care providers that praise the child or teen's effort, regardless of whether the child or teen succeeds in an undertaking. Encouraging children and adolescents to try again if a goal has not been reached the first time is important.

Developing resiliency

Resiliency in children and adolescents is an important life skill that provides them with the ability to overcome mistakes, failures, stress and frustrations. It is a skill that will serve them well in later life.

The following are tips for teachers in developing resiliency:

- Teach children and adolescents that failures and mistakes are part of life. Making mistakes is one way of learning things. A child or teen should be encouraged to ask himself or herself what s/he can learn from the mistake that s/he has committed.
- Encourage children and adolescents in tolerating failure. Help them by talking about their efforts, accepting their mistakes and encouraging them to try again.
- Help children and teens in acknowledging their difficulties and discussing ways to overcome them. This is an important problem solving skill.
- Work with parents in developing the child and teen's resiliency. This can be done through parent-teacher conferences and other formal and informal contacts in the school setting.
- One important factor that helps a child deal with adversities is the presence of a supportive, caring adult that the child or teen identifies with or from whom s/he can draw strength. Share this knowledge with parents.
- Teachers must be sensitive to the fact that for some students, the supportive, caring adult may be the teacher himself or herself.

Managing anger

Teachers in both elementary and high school are always confronted with

fight in school that, in some situations, turn dangerous not just to those involved, but to the rest of the school community. An important life skill that teachers can pass on to students is handling anger. Tips given to students can go a long way in preventing the consequences of a fight or an explosive emotion manifested in other ways.

Here are a few techniques to help students handle anger:

- Arrange ahead of time: a “calming down” place and/or a trusted friend or adult to talk to. Stay with this person or in this place until the anger has passed.
- Do an activity that promotes relaxation and gets the anger out in a safe way e.g. throwing a ball, running. Continue the activity until the anger has passed and calmness has returned.
- Try the following any time anger is building up: deep breaths, count to 10 or more, rub feet on the floor, think of a calm picture.

Once the anger has passed, check in with a parent or a trusted adult and let them know the cause of the anger.

Another technique is **C-A-L-M: listening skills to diffuse anger.**

C-alm yourself first; do not get defensive. Suspend all judgement. Commit yourself to calming the other person. Remember that resolution cannot happen while the individual is angry. Stay relaxed. Display an open style of body language (arms out at sides not crossed over chest, uncrossed legs, positive facial expressions).

A-cknowledge the importance of what the other person is saying. Make eye contact. Ask the other person to tell you more about the situation. Show concern for the other person’s needs.

L-isten actively. Let the other person voice his feelings. Listen for information the other person is sharing. Do not interrupt.

M-ake sure you understand. Clarify and summarize the other person’s concerns. Use feeling words (empathize) that demonstrate your desire to understand the angered person. After summarizing, ask the other person if you have understood her/his position.

The angered individual wants to be understood. By demonstrating your intention to suspend judgement and understand the angered person, without becoming angry yourself, you can help diffuse his or her anger. The CALM technique requires a conscious effort on the part of the listener to momentarily set aside his or her needs and attend to the angered person’s needs.

RED FLAGS FOR MENTAL HEALTH CONCERNS

It is not uncommon that many mental health difficulties have not yet been identified by the time a child enters elementary school. Also, some of these problems do not manifest until the child is challenged in a school setting. The ability of teachers to be able to pick up some red flags will do the child and teen a great service. Early detection and early intervention is a critical step in helping a child with his or her difficulties or problems.

It is important for teachers to avoid “branding” a child as having a condition. It is even worse to call him or her names in front of classmates or even with other teachers in school. For one, it is not the role of teachers, nor is it within their capacities, to make a diagnosis on the mental or emotional state of a child or teen. However, teachers are the surrogates of these children for more than 2/3 of the time in a year and are, thus, provided the unique chance to interact with them and to monitor them through time. Teachers, therefore, can make critical and valuable observations on a child’s behavior and progress in school. These observations should be shared with parents and guardians, and together, a common course of action can be taken. The ultimate goal is how best to help the child or teen do well in school.

The partnership between the teacher and the parent or guardian, or in broader terms the school and the home, is underscored. Mechanisms or processes, therefore, to affect this partnership should be in place. Certainly, there are obstacles like the huge class size in many urban schools and the limited contact time with students because of the schedule of having two or sometimes three shifts of classes in one day. Teachers and school administrators thus face this enormous challenge that requires creative approaches. The hope, always, is to move towards a course of action that will be helpful to the fuller development of these children and adolescents who are in the care of our schools.

Bullying in schools

A common conflict encountered by students in school is bullying. In the Philippines, over one-third of students are bullied on one or more days in a one month period. This occurs both in the elementary and high school setting. About three in 10 of those who are bullied report that they were most often hit, kicked, pushed, shoved around or locked indoors.

Research has shown that children who are repeatedly and consistently bullied may develop low self esteem, become overly anxious or have problems expressing himself or herself. Meanwhile, it is possible that students who do the bullying might have underlying problems and that the bullying attitude on other students is merely an outward manifestation. Teachers, therefore, should be aware of this problem in school and the potential long term consequences especially among the victims.

Bullying can come in many forms:

- Verbal bullying is one of the most common, involving name calling, teasing, threats, taunting and spreading rumors.
- Physical bullying is the most obvious as it involves inflicting bodily harm on another person.
- Social bullying is a more sophisticated and manipulative type that affects a person's emotional well-being. Also known as exclusion or shunning, the victim feels bullied by the entire peer group instead of one individual. Social Bullying is most prevalent between girls and often carried out in the form of rumors, misinformation and exaggeration; these are all aimed at damaging the social status or reputation of the victim.
- Extortion as bullying generally targets younger victims who are afraid to stand up to their tormentors. It can include threats and demands for money, possessions (clothing, jewelry, school supplies), other paraphernalia (sports equipment, electronic gadgets, toys), lunch or snacks.
- Sexual harassment is most frequent in high school students but can be observed in children as young as grade 3 and generally occurs as boys bullying girls. Sexual bullying may include sexually explicit comments or jokes, inappropriate and unwanted touching, sexual name calling like "slut", or attempts to remove clothing like pants or peeking under a girl's dress.

How to address bullying

If the child has bullied others

Put a stop to the behavior immediately, and have the child practice a more appropriate behavior instead e.g. child pushes sister away to get her toy, have him practice asking for and receiving the toy. If the bullying was not discovered until a later time, find a way for the child to "make amends" e.g. apologize and return what was taken from another child.

Supervise situations in which bullying may occur. If no adult can be present, consider not letting the child participate in that situation. Adults should be aware of their own behavior, modeling for children how they would treat others. Avoid the use of physical punishment i.e. spanking, which may give the child the message that physical aggression is ok. Instead, use removal of privileges, additional chores, helping younger children at home or in the neighborhood as consequences for bullying behavior.

Be as positive as possible with the child. Aim for 10 positive comments for every negative comment given to the child. Parents should let the child's school guidance counselor, teacher or school psychologist know about their concerns and let the professionals help.

If the child has been the victim of bullying

Have the child practice straightforwardly and assertively tell the bully to “stop bothering me” and then move away. Problem solve with the child about what she can do to avoid situations in which she may be bullied, and what to do the next time she is bullied (walk away, tell responsible adult). Supervise situations in which bullying may occur. If no adult can be present, consider not letting the child participate in that situation.

Be aware of the toll that bullying takes on a child’s self-esteem. Actively look for ways to boost the child’s self image i.e. support him in pursuing his skills and talents. Parents should let the child’s school guidance counselor, teacher or school psychologist know about their concerns and let the professionals help. If the school does not have an anti-bullying program, suggest that it start one.

If the child is a bystander

Teach the child how to help without getting hurt. The child might say, “Cool it. This doesn’t solve anything.” Teach the child never to cheer on or even quietly watch a conflict. This only encourages the bully, who wants to be the center of attention. Encourage the child to tell a trusted adult about the bullying. Talking to an adult is not tattling. It is an act of courage and promotes safety. Suggest to the child to bring a friend, to make the telling a bit easier. Help the child support other children who tend to be victims. Teach the child to include these children in his activities.

Other mental health problems

The purpose of the listing that follows below is to help alert the teachers to some peculiar signs in a child or teen that may be indicative of a more serious condition. As mentioned above, teachers should not and cannot make a diagnosis. They can, however, offer valuable information to the parent or guardian, or, if with assent and consent, to a health professional.

The listing is not comprehensive and the description of signs and the symptoms for each condition not exhaustive. It should, however, provide our teachers with some consciousness on these conditions so that when some behaviors are manifested by children and teens, they can pick up on them and discuss them with parents or guardians.

Learning problems and disorders

Common signs in early childhood:

- ❑ Has difficulty naming common objects
- ❑ Has difficulty understanding simple concepts (big vs little; on vs in)
- ❑ Has delayed recognition of letters and numbers, shapes, colors, sounds and symbol association
- ❑ Cannot assemble simple puzzles or categorize
- ❑ Does not recognize colors by age four to five, has difficulty learning

color names

- ❑ Cannot recite the alphabet by age four to five

Common signs in middle childhood:

- ❑ Cannot count to 20 by age five
- ❑ Does not associate sounds with letters; has difficulty learning phonics
- ❑ Spells poorly compared to same age peers
- ❑ Has problems with written composition (e.g. narration, organization, grammar, punctuation) compared to same age peers
- ❑ Does not acquire computational skills (adding and subtracting)
- ❑ May have difficulty understanding concepts like time
- ❑ Mis-sequences syllables (e.g. “aminals” for “animals”)
- ❑ Has difficulty remembering own address and telephone number
- ❑ Has problems with verbal sequences (e.g. placing months of the year or days of the week in correct order)
- ❑ Has difficulty remembering and executing multi-step directions (even two or three steps)
- ❑ Reverses letters (e.g. writes “b” for “d,” “p” for “q”) past age seven

Common signs during adolescence:

- ❑ Has weak reading skills
- ❑ Has weak organizational skills (e.g. has difficulty remembering homework, finding books)
- ❑ Fails or has pronounced difficulty in certain school subjects (e.g. history, foreign language, math)
- ❑ Cannot express thoughts in writing
- ❑ Cannot use quantitative skills in functional manner (e.g. has difficulty applying arithmetic concepts to physics problems)

Attention-Deficit Hyperactivity Disorder

ADHD is a continuum of problems that can manifest as inattention, impulsivity and hyperactivity. Children (usually boys) and adolescents with ADHD also commonly have an associated disorder like learning disability, mood and anxiety problems and oppositional and conduct problems. When suspected, teachers should work very closely with the parent or guardian and the health professional in establishing the diagnosis and in developing an appropriate intervention in the school setting.

These selected common signs are taken from the Diagnostic and Statistical Manual for Primary Care.

- *Inattention Problem.* In early childhood, the child’s distractibility and brief attention span cause some family problems and difficulty in playing with same-age peers. In middle childhood and adolescence, the child or teen tends to miss instructions in school; he or she gives up on

tasks easily and misses subtle social cues.

- *Hyperactive and Impulsive Problem.* In early childhood, the child runs into people and things; cannot sit still; and, often has minor injuries. In middle childhood, the child is intrusive, interrupts others often and has trouble completing chores. During adolescence, the teen's "fooling around" behavior annoys others; he or she fidgets when sitting.
- *Attention Deficit and Hyperactivity.* In early childhood, compared with other children his or her age, the child seems immature, is easily distracted, cannot complete activities and often misses important information (e.g. rules of a game). He or she also runs, jumps and climbs excessively indoors, cannot sit still for meals and stories and is often "into things." In middle childhood and during adolescence, the child or teen works below his potential in school, is messy and careless about his work, gives up easily, has trouble organizing tasks and seems not to listen. He or she also talks and interrupts others excessively, cannot sit still for meals and fidgets. A younger child disrupts others with noise, whereas an adolescent interrupts, annoys and is often in trouble.

Anxiety problems and disorders

Problems with fear and anxiety in a child also present as a spectrum that varies in intensity and on how the manifestations of the problem affect a child or adolescent's functioning. This continuum includes the normal reactions that come with fearful situations and serves as a useful defense mechanism for the child. Teachers need to be mindful of the circumstance and the intensity of a child or teen's reaction.

In early childhood, a child manifests excessive separation distress, clinginess and sleep difficulties.

In middle childhood, there are worries, fears and physical symptoms that prevent the child from participating in activities or affect his/her performance.

Stress may cause agitation, withdrawal, loss of developmental skills, or repetitive play focused on trauma. Symptoms are resolved when the stressor is resolved. Sleep problems persist.

In adolescence, as in middle childhood, worrying, fears and physical symptoms that prevent the child from participating in activities or affect his/her performance. Stress may cause boredom, social withdrawal, sadness, aggression, and/or risk taking behaviors like drug or alcohol use. Physical symptoms include restlessness, sweating, tension, recurrent somatic complaints such as abdominal pain or headaches. Symptoms resolve when stressor does

and they do not significantly interfere with activities or relationships. Sleep problems persist.

When the anxiety of a child or adolescent begins to affect his or her functioning, the possibility of an anxiety disorder should be explored with the parent or guardian and the health professional. Anxiety disorder comes in various forms. Professional help is necessary in making the diagnosis and in developing an intervention that will help the child or adolescent. Examples of anxiety disorders follow:

- ❑ Generalized Anxiety Disorder
- ❑ Panic Disorder
- ❑ Specific Phobias (animals, heights, water, storm, enclosed spaces, blood injection or injury, costumed characters, loud sounds)
- ❑ Social Phobia
- ❑ Separation Anxiety Disorder
- ❑ Acute Stress Disorder
- ❑ Posttraumatic Stress Disorder
- ❑ Obsessive-Compulsive Disorder

Mood problems and disorders

Mood problems including depression are an under-recognized condition among Filipinos, let alone children and adolescents. One major reason for this is the stigma of being branded with a mental health problem. However, in the National Mental Health Policy circulated by the Department of Health in 2001, then Secretary Manuel Dayrit cites a local research conducted in the 1980s showing that 17 percent of adults and 16 percent of children who consulted at three local health centers in Sampaloc, Manila have mental disorders.

Recognition of a mental health problem is very important in much the same way as recognizing a specific physical condition like an infection or a congenital defect. Corrective measures can only be carried out with proper identification. Teachers, then, play a crucial role in transforming the general thinking about mental health problems and in helping identify the problem in a child or an adolescent.

Common signs of depression in children and adolescents are listed below. Teachers should be concerned when they see these behaviors in school and the classroom setting.

- ❑ Separation anxiety, phobias, poor self-esteem
- ❑ Reckless and destructive behavior (e.g. substance abuse, unsafe sexual activity, dangerous driving)
- ❑ Illicit activities like impulsive stealing, fighting, spending sprees
- ❑ Recurring somatic complaints (e.g. headaches, belly aches, muscle and joint pains or complaints of decreased energy or fatigue)

- ❑ Increases or decreases in sleep and/ or appetite
- ❑ Irritability or withdrawal
- ❑ Poor social and academic functioning
- ❑ Hopelessness, boredom, emptiness
- ❑ Loss of interest in activities especially in old pleasures
- ❑ Thoughts of death and suicide, especially if recurring

When these behaviors are noted, teachers should discuss the observations with parents or guardians so that appropriate steps can be undertaken to help the child or adolescent.

These findings may fall into any of the following specific mood disorders. The diagnosis, however, has to be made with a mental health professional:

- ❑ Dysthymic Disorder
- ❑ Major Depressive Disorder
- ❑ Bipolar Disorder

Children and adolescents with depressive disorders also commonly have associated problems like anxiety disorders, substance abuse, disruptive disorders and somatoform disorders.

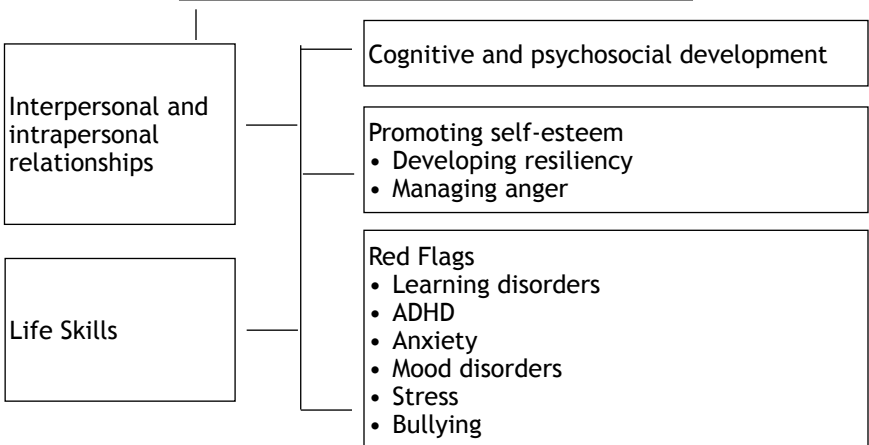
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FRAMEWORK FOR MENTAL HEALTH



CHAPTER 5

HEALTH PROMOTION AND PREVENTION OF DISEASES

Health is no longer simply defined as the absence of disease and infirmity. The World Health Organization defines health as the state of complete physical, mental and social well being. There is also an emerging concept of wellness which acknowledges that the health of individuals, families and communities is not solely determined by biologic factors. Lifestyle choices (physical activity and exercise; nutrition and diet; smoking and alcohol, as examples) and the environment (pollution and climate change) also play important roles. These factors should also be incorporated in the discussion and teaching of health concepts in the classroom.

Health promotion is a process of enabling individuals, families and communities to learn more about their health and to actively take part in keeping themselves healthy. Health needs to be viewed both as a right and a responsibility. This requires a multi-stakeholder and partnership approach.

Health promotion strategies are not limited to specific diseases, either communicable or non-communicable, but equally applicable to injuries, both unintentional and intentional, and to psycho-emotional or mental health.

Levels of Prevention (primary, secondary and tertiary)

- Prevention in health refers to both active and passive ways of keeping an individual, family and community free or protected from harmful conditions (physical, mental or social) or injuries.
 - ❑ Primary prevention avoids the development of disease or injuries. Most community-based or population-based activities and interventions (e.g. immunizations, health promotion and healthy choices) are primary preventive measures.
 - ❑ Secondary prevention involves screening for diseases, conditions or injuries before the appearance of signs, symptoms and other mani-

festations so that the progression of the disease, condition or injury can be prevented (Examples: screening for cholesterol to prevent stroke or heart attacks; screening for learning disabilities so early intervention can be started).

- Tertiary prevention seeks to minimize the disability or impact of an already existing disease, condition or injury. An example is physical or occupational therapy for a person who had a stroke so the debility can be minimized and the person can be functional to the best of his/her ability.

Health promotion strategies can be developed for the three levels of prevention. For example, a multi-level approach can be used in setting up programs or interventions to dissuade children and adolescents from smoking and from using dangerous drugs. The same approach can be used in discouraging them from doing other risky behaviors or activities.

HEALTHY LIFESTYLE

The choices that we make for ourselves, like the food we eat and the activities that we do, are important determinants of our health. Our choices can make us healthy or can predispose us to diseases. These are supported by numerous scientific and research studies. Make healthy choices to combat diseases of lifestyle (cardiovascular diseases, obesity, tobacco-related diseases). Diseases of lifestyle include cardiovascular diseases like stroke, hypertension and heart disease, obesity, tobacco-related diseases.

Nutrition

If people eat a balanced diet, getting all the necessary nutrients, there really is no need to take the commercially available vitamin and mineral tablets.

[Refer to Chapter 2 Nutrition]

Physical activity and exercise

Keeping oneself healthy is not only about eating the right food. It is also about physical activity. Regular physical activity is important to one's health and wellness. The balance between the calories or energy one gets from food and the calories or energy one uses during physical activity will determine the body weight of a person.

To remain fit and healthy, be physically active, at a moderate intensity for at least 30 minutes most days of the week. Children and adolescents need to be physically active 60 minutes every day for most of the days in a week.

In controlling or bringing down one's weight, increasing the intensity or the amount of time that one is physically active will be helpful. About 60

minutes a day may be needed to prevent weight gain.

Avoidance of smoking and tobacco use

Scientific evidence has conclusively linked smoking and tobacco use to a myriad of diseases. [*Refer to Table 12, page 119*]

Stress management

Everyone experiences stress from time to time, so it is perfectly normal. However, normal doesn't necessarily mean healthy.

Stress management encompasses techniques intended to equip a person with effective coping mechanisms for dealing with stress, with stress defined as a person's physiological response to an internal or external stimulus i.e. work-related stress often leads to gastrointestinal problems like hyperacidity.

The key to de-stressing in the moment is getting away from the stressor. Developing new habits which regularly remove you and distract you from stressors and stressful situations and pressures is essentially how to manage stress on a more permanent basis. Here are some ideas for de-stressing.

- Laughter really is the best medicine. Humor works because laughter produces helpful chemicals in the brain. It also distracts you from having a stressed mind set. Distraction is a simple effective de-stressor—it takes your thoughts away from the stress, and thereby diffuses the stressful feelings. Grab the comics section of your newspaper.
- Go for a short quick really brisk walk outside. Make up a mantra that you can keep repeating to yourself and to other people. You can extend the exercise by going to a park and jogging a little. Or do a few jumping jacks – something energetic to get your body moving and relaxing. Or stroke a dog, or pick up some litter, or kick a ball.
- Get a big cup or a bottle of water. Most people fail to drink enough water - that's water - not tea, coffee, soda, 'sports' drinks, Red Bull or fruit juice. All body organs, including the brain, are strongly dependent on water to function properly. If the body is starved of water, its function will be below the best.

MAINTENANCE OF HEALTH

Preventive exams and health maintenance visits

Babies have a routine schedule of check-ups with health providers (i.e. midwives, nurses or physicians) at local health centers or private clinics. They are seen almost every month until they are one year old. During these visits, they receive their scheduled immunizations. The health provider also promotes exclusive breast feeding at least until the 6th month and checks how

they are gaining weight and how they are growing. They are also checked for health problems that may be developing so they can be immediately attended to. This way, more serious consequences are prevented.

When toddlers reach their pre-school and school-age years, a regular check-up with a health provider is still highly recommended. This can take place when the child is five, six, eight and 10 years old. This well-child or health maintenance visits ensure that the growth and development of the child can be monitored and possible health problems identified immediately. The emotional well-being of the child is also assessed.

During the teen-age years, a yearly visit to a health care provider is recommended to continue the growth monitoring and the promotion of the physical and psycho-emotional health of the adolescent. Hopefully, through these visits, the adolescent will take on an active and informed role in keeping himself or herself healthy, a life skill that will serve him/ her well into adulthood.

Promotion of healthy lifestyle and advocacy on healthy choices are also made during every well-child or well-teen visits.

Newborn screening

A law was passed in 2004 (Republic Act 9288) that promulgated a comprehensive policy and national system on the screening of newborns. Under this law, the Department of Health was designated as lead agency in setting up a process that would ensure that newborns are screened for specific diseases after the first 24 hours of life and no later than the first 72 hours or the third day of life.

The newborn screening test is a simple and safe test that takes a few drops of blood from the heel of the baby. The blood sample is then sent to designated laboratories so that it can be tested for the following diseases of the newborn (the brief description of the diseases are from the Department of Health website):

Congenital Hypothyroidism. CH results from lack or absence of thyroid hormone, which is essential to growth of the brain and the body. If the disorder is not detected and hormone replacement is not initiated within four weeks, the baby's physical growth will be stunted and s/he may suffer from mental retardation. With detection and treatment, the baby grows up normally.

Congenital Adrenal Hyperplasia. CAH is an endocrine disorder that causes severe salt loss, dehydration and abnormally high levels of male sex hormones in both boys and girls. If not detected and treated early, babies may die within 7-14 days. Detection and treatment will save the baby's life.

Galactosemia. GAL is a condition in which the body is unable to process galactose, the sugar present in milk. Accumulation of excessive galactose in the body can cause many problems, including liver damage, brain damage and cataracts. Infants may die without treatment.

Phenylketonuria. PKU is a metabolic disorder in which the body cannot properly use one of the building blocks of protein called phenylalanine. Excessive accumulation of phenylalanine in the body causes brain damage. Detection and treatment will avert the retardation; baby grows up normal.

Glucose-6-phosphate Dehydrogenase deficiency. G6PD deficiency is a condition where the body lacks the enzyme called G6PD. Babies with this deficiency may have hemolytic anemia resulting from exposure to certain drugs, foods and chemicals. No treatment will cause severe anemia and Kernicterus, while early detection and treatment will prevent this.

Based on Philippine statistics, about 33,000 newborns are afflicted with these diseases annually. They stand to benefit directly from the screening program. If a baby tests positive for any of the tests above, s/he should be immediately seen by a specialist so confirmation of the test can be done and treatment initiated. Immediate treatment can prevent mental retardation, severe disease and even death.

Immunization

An important public health intervention that has controlled the spread of infectious and communicable diseases is immunization. Global cooperation and immunization programs have also led to the eradication of deadly diseases like smallpox and possibly poliomyelitis in the near future.

The national immunization program that is being undertaken through our health centers is called the Expanded Program of Immunization (EPI). This is promoted by the WHO and the Philippine Department of Health.

EPI vaccines are available for free in government or public health care facilities, usually in the municipal or city health clinics or the rural health clinics or stations nationwide.

Communicable diseases that can be prevented through EPI include the following: poliomyelitis, diphtheria and tetanus infection, whooping cough (pertussis infection) and measles. Some degree of protection can be achieved against the serious forms of tuberculosis (TB meningitis, military TB) through inoculation of BCG vaccine immediately after birth. Also, in the Philippines, immunization against Hepatitis B infection is included in the program.

The recommended schedule of primary immunization, based on the EPI, is as follows:

- BCG vaccine (given as an intra-dermal injection) – Given at birth
- Polio (given as oral drops) at 6, 10 and 14 weeks of age
- DPT (given as an intra-muscular injection) at 6, 10 and 14 weeks of age
- Measles (given as a subcutaneous injection) at 9 months of age
- Hepatitis B (given as intra-muscular injection) at birth or at 6 weeks (first dose), then at 10 and 14 weeks of age
- Booster shots for polio and DPT are also recommended during the first and fourth birthday of the child. However, this is no longer part of the EPI and is usually availed of through private physicians.

Immunization and subsequent protection against the following diseases are also available and highly recommended. However, they are not all currently provided in government or public health centers as part of EPI.

- *Measles-Mumps-Rubella infections (combination MMR vaccine)*. The first dose of the vaccine is given at 12 to 15 months of age. A second dose is recommended as early as a month after the first dose or at 4-5 years of age. This is given as a subcutaneous injection.
- *Hemophilus B infection (HiB vaccine)*. This vaccine can be given at the same time as the DTP and Polio vaccines. Three doses given as an intramuscular injections make up the primary series. A fourth dose or booster shot is recommended at age 12 months.
- *Chicken Pox infection (Varicella vaccine)*. Two doses are now recommended and are given as subcutaneous injections. The first dose is given anytime after the child's first birthday, usually 12-15 months of age. The second dose is recommended to be given at age four to six years.
- *Hepatitis A infection (Hepatitis A vaccine)*. The Philippines is considered a highly endemic area for Hepatitis A infection. Hepatitis A is a virus that causes a self-limited disease characterized by fever, malaise, loss of appetite, vomiting and jaundice (yellowing of the skin and the white portion of the eye). The infection is commonly transmitted from person-to-person through the fecal-oral route. This happens through fecal contamination of food or water by an individual with Hepatitis A and oral ingestion of contaminated food or water by a susceptible individual. The infection is very common in developing countries and commonly involves children. In a few cases, especially those with an underlying liver problem, a more serious type of hepatitis can develop, which can cause death. Unlike Hepatitis B, Hepatitis A does not cause a chronic infection. The most important control measure against Hepatitis A is proper sanitation and hygiene. These include the use of potable

water sources and proper food preparation, including thorough washing of food. Hand washing after the use of toilet and before meals is very important. Hand washing is also very important among those handling diapers. Vaccines are available and can be given to protect against Hepatitis A. There are commercial preparations for children older than 1 year old, adolescents and adults. Two doses of the vaccine are required to provide effective protection

- *Influenza infection (Influenza vaccine)*. Immunization against influenza is now recommended yearly for children from 6 months to 59 months (before 6th birthday). Beyond the 6th birthday, yearly immunization is still recommended for those with chronic medical conditions including asthma. In the Philippines, vaccine that contains the southern strains of the virus should be given.
- *Pneumococcal infection*. Pneumococcus (*Streptococcus pneumoniae*) is the most common bacterial cause of ear infections and serious bacterial infections in children. It also causes infection of the sinuses, pneumonia and conjunctivitis. In infants and young children, Pneumococcus is also a common cause of bacterial meningitis. Immunization against Pneumococcus is not yet part of the EPI due to the cost but advocacy efforts are being done to include it. However, the vaccine is commercially available. The heptavalent vaccine is now recommended to be given routinely in four doses, together with the other standard immunizations for infants and children. Another form of the vaccine (with 23-valent) can also be given to older children and adults especially if there are known indications like a chronic heart, lung or kidney problems, cancer and diabetes. A discussion with health professionals is helpful in determining whether older children and adults require the vaccine.
- *Typhoid infection (Typhoid vaccine)*. This vaccine can administered during epidemics or provided to high risk groups.

Vaccine that provides protection against meningococcal infection caused by *N meningitidis* is also available. However, this vaccine is not routinely given and should be given only to children and adolescents with specific medical conditions or during declared public health situations.

Vaccines for adults and the elderly. For routine health maintenance and prevention, the following vaccines are recommended for adults and the elderly.

- Booster doses of tetanus and diphtheria (usually every 10 years).
- Yearly influenza immunization for those 65 years old and older.
- Immunization against pneumococcus is recommended for those 65 years old and older. A re-immunization may be necessary five years after the primary immunization.

- Adult immunization against pneumococcus (those younger than 65 years old) is indicated only for those with specific medical conditions.

Many combination vaccine preparations are now available. They have been shown to be equally effective when compared to the individual administration of vaccines. For example, instead of giving DTP, Hepatitis B and HiB vaccines as three separate injections, a vaccine preparation that combines all three is now available and can be given as one shot. This minimizes the actual number of times an infant or child is given a shot.

A new vaccine against human papilloma virus, known to cause cervical cancer, has been developed and is also now available for immunization of female adolescents and adults. Routine vaccination is recommended starting at age 11-12 years. A second and third dose should be given two months and six months after the first dose.

Currently, vaccines are being developed against some other common infectious diseases, but these are still experimental and not yet available to the public. These are vaccines against malaria, avian flu and HIV infection.

Value of breastfeeding in the prevention of infant diseases

The nutritious value of breast milk is unparalleled and is superior over commercially available milk formulas. There is no need to check for the temperature of the milk as it is always right. Breastfed babies also have higher intelligence quotients because of the nutrients in mother's milk. No milk formula, no matter how many vitamins and minerals are added, can ever compare to the nutrients in breast milk.

The mother benefits from breastfeeding as well. Diseases like obesity, osteoporosis, breast cancer, heart problem, diabetes are prevented.

Likewise, breastfeeding is practical; it is available everywhere and anytime and does not require the use of water, a scarcity in many areas of the country.

Breastfeeding is also economical when compared to the cost of commercially available milk formulas. It can be expressed and kept viable for as long as four months when frozen. At the time of feeding, thaw and feed using a small spoon or small cup. Thawed breast milk should never be put back in the freezer. As well, Bottle feeding requires the addition of boiled water to the powdered milk and the cleaning or sterilization of infant bottles.

Best of all, breast milk provides protection against the following diseases and conditions. These conditions are less commonly seen in breastfed babies: allergies, asthma, autoimmune diseases (thyroid, Celiac Disease, Crohn's

Disease, Multiple Sclerosis), diabetes, diarrhea and acute gastroenteritis including typhoid infections, ear infections (or Acute Otitis Media), eczema or atopic dermatitis (a kind of skin rash quite common with babies), obesity, respiratory infections and wheezing, Rheumatoid Arthritis, urinary tract infections, other conditions like Hodgkin’s Lymphoma.

Breastfeeding promotes bonding between the mother and her child. It is at this time when the infant learns to explicitly trust the mother. As the child grows up, this trust and secure bond between mother and child will promote a healthier relationship between the two. It is not only the mother who bonds securely with her child. The father and other caregivers benefit from this as well.

ADOLESCENT PREVENTIVE HEALTH CARE

Sexual Maturity Ratings or commonly known as Tanner stages is a tool used in assessing the physical development during puberty. It is very useful in assessing the development of secondary sexual characteristics. There are five stages of the SMRs or Tanner Stages based on the appearance of pubic

Table 7. Sexual maturity ratings

SMR	Pubic Hair (boys and girls)
1	<ul style="list-style-type: none"> • No pubic hair; pre-adolescent
2	<ul style="list-style-type: none"> • Hair is straight and scanty at base of penis or medial border of labia
3	
4	<ul style="list-style-type: none"> • Hair is darker hair, small amount and beginning to curl
5	<ul style="list-style-type: none"> • Hair is coarse and curly; increased amount, but less in distribution compared to adult. • Adult distribution of pubic hair.
SMR	Genitals (boys)
1	<ul style="list-style-type: none"> • Preadolescent size of penis and testes.
2	<ul style="list-style-type: none"> • Slight enlargement of testes and scrotum; change in texture of scrotal skin and darker in color.
3	<ul style="list-style-type: none"> • Enlargement of penis and further enlargement of testes and scrotum.
4	<ul style="list-style-type: none"> • Bigger breadth of penis and more developed glans; bigger testes and scrotum; coarser scrotal skin.
5	<ul style="list-style-type: none"> • Adult appearance of external genitals.
SMR	Breast (girls)
1	<ul style="list-style-type: none"> • Preadolescent, no breast tissue.
2	<ul style="list-style-type: none"> • Breast bud noted.
3	<ul style="list-style-type: none"> • Enlarged breast with bigger diameter of areola
4	<ul style="list-style-type: none"> • Areola and immediate breast tissue form a secondary mound.
5	<ul style="list-style-type: none"> • Breast contour is defined. • Areola forms part of the breast contour; breast is bigger and nipple prominent.

hair (for both boys and girls); development of the genitals (for boys); and, development of the breast (for girls). The SMR is made at every yearly health maintenance visit of the adolescent to his/ her health care provider. This way, deviations from normal development can be quickly picked up [Table 7].

Breast self examination and testicular self examination

An important health practice that adolescents need to know by heart is the skill of doing breast self examination for females and testicular self examination for males. Cancer or malignancies can develop in the breast and the testes. When detected early on, the disease can be cured. The goal of self-examination is to allow the adolescent or adult to recognize unusual findings in their breast or testes so that they can immediately seek medical attention.

Anticipatory guidance for adolescents

Practicing healthy habits should be encouraged among adolescents and communicated positively to them in every learning opportunity.

- Get at least eight hours of sleep each night.
- Eat three full meals each day at appropriate times and supplement with healthy snacks.
- Minimize food that is high in fat and sugar.
- Increase servings of vegetables and fruits in the diet
- Engage in physical activity for 30-60 minutes at a time, at least three times a week.
- Maintain a good weight through proper nutrition and exercise.
- Seek help if always feeling sad, angry or hopeless.
- Learn meaningful ways on how to cope with anger and conflicts. Seek help if necessary.
- Be responsible for work in school and make plans for after high school.
- Take responsibility for one's own health.
- Respect others (parents, teachers, siblings and peers).
- Participate in meaningful family and community activities.
- Respect rules at home, school and community.

Adolescents should be discouraged from potentially risky behaviors and situations.

- Do not bring or use deadly weapons at anytime (knives, blades, ice pick, guns).
- Do not drink alcohol.
- Do not ride in a vehicle where driver is drunk or under the influence of alcohol.
- Always wear a seatbelt.
- Do not use tobacco or cigarettes, drugs and inhalants.
- If presently a user of tobacco, alcohol or drugs, seek help. Seek available helpful services in the school and community.

Self-Breast Exam

Step 1: Begin by looking at your breasts in the mirror with your shoulders straight and your arms on your hips.

Here's what you should look for:

- breasts that are their usual size, shape, and color.
- breasts that are evenly shaped without visible distortion or swelling



If you see any of the following changes, bring to your doctor's attention:

- dimpling, puckering, or bulging of the skin.
- nipple that has changed position or an inverted nipple (pushed inward instead of sticking out)
- redness, soreness, rash swelling



Step 2: Raise your arms and look for the same changes.

Step 3: While you're at the mirror, gently squeeze each nipple between your finger and thumb and check for nipple discharge (this could be a milky or yellow fluid or blood).



Step 4: Feel your breasts while lying down, using right hand to feel the left breast and then the left hand to feel the right breast. Use a firm, smooth touch, keeping the fingers flat and together.

Cover the entire breast from top to bottom, side to side— from your collarbone to the top of your abdomen, and from your armpit to your cleavage.



Follow a pattern to be sure that you cover the whole breast. Begin at the nipple, moving in larger and larger circles until reaching the outer edge of the breast. Move your fingers up and down vertically, in rows, as if mowing a lawn. Be sure to feel all the breast tissue: just beneath the skin with a soft touch and down deeper with a firmer touch. Begin examining each area with a very soft touch, and then increase pressure so that you can feel the deeper tissue, down to your ribcage.

Step 5: Finally, feel your breasts while you are standing or sitting. Many women find that the easiest way to feel their breasts is when their skin is wet and slippery, so they like to do this step in the shower. Cover your entire breast, using the same hand movements described in Step 4.

Testicular Self-examination

The testicular self-examination is an easy way for guys to check their own testicles to make sure there aren't any unusual lumps or bumps - which are usually the first sign of testicular cancer.

- Avoid situations where drugs and alcohol are present.
- Do not join gangs or groups that engage in risky behaviors and practices.
- Learn skill of how to say no to peers and friends.

Adolescents also need to learn about sexuality. The following points can be given to adolescents as anticipatory guidance.

- Identify an adult who can give accurate information.
- Ask a responsible adult or health professional about puberty and sexual development; pregnancy and contraception; and, sexually transmitted

Although testicular cancer is rare in teenage guys, overall it is the most common cancer in males between the ages of 15 and 35. It's important to try to do a TSE every month so you can become familiar with the normal size and shape of your testicles, making it easier to tell if something feels different or abnormal in the future.

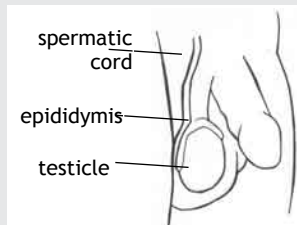
Here's what to do:

It's best to do a TSE during or right after a hot shower or bath. The scrotum (skin that covers the testicles) is most relaxed then, which makes it easier to examine the testicles.

Examine one testicle at a time. Use both hands to gently roll each testicle (with slight pressure) between your fingers. Place your thumbs over the top of your testicle, with the index and middle fingers of each hand behind the testicle, and then roll it between your fingers.



You should be able to feel the epididymis (the sperm-carrying tube), which feels soft, rope-like, and slightly tender to pressure, and is located at the top of the back part of each testicle. This is a normal lump.



Remember that one testicle is slightly larger than the other for most guys - this is also normal.

When examining each testicle, feel for any lumps or bumps along the front or sides. Lumps may be as small as a piece of rice or a pea.

If you notice any swelling, lumps, or changes in the size or color of a testicle, or if you have any pain or achy areas in your groin, let your doctor know right away.

Lumps or swelling may not be cancer, but they should be checked by your doctor as soon as possible. Testicular cancer is almost always curable if it is caught and treated early.

diseases.

- Acknowledge that sexual feelings in adolescents are normal.
- Delay having sex and learn how to say no to sex; learn how to resist sexual pressures.
- Sex is the most intimate physical expression of a loving relationship and best pursued in the context of marriage.
- Learn about abuse, especially sexual abuse from adults, including family members, and from peers.
- Ask questions and speak with a responsible adult if concerned about feelings for same or opposite sex.
- If sexually active, learn about safe sex and consequences of early sexual activity.

Early sex, pregnancy and sexually transmitted diseases

In the Young Adult Fertility and Sexuality Study of 2002 (YAFS-3), a survey of Filipino youths aged 15 to 27 years old, 23.2 percent reported having premarital sex. The mean age at first sex is 18 years old. Of these respondents, only 21 percent used contraception during their first sexual encounter and only 25 percent reported using contraception during the last time they had sex.

Also from YAFS-3, among those who are sexually active, 35.2 percent report having more than one partner. The mean number of sexual partners reported is four.

These proportions or percentages have increased compared to the YAFS result collected in 1994 and they point to the increasing sexual risks that adolescents and young adults are taking.

It is necessary, therefore, to open up the discussion on sexuality with our youths early on. Adolescents should learn the value of delaying sex, preferably until after marriage. They should also learn about the consequences of early sexual initiation like pregnancy and sexually transmitted infections. At the same time, however, sexually active teens need to be provided continuing guidance. They should also be provided the appropriate reproductive health services that they may require.

The core message to adolescents should still be on delaying sex and on practicing abstinence. It is the best and safest way to prevent pregnancy and sexually transmitted diseases.

For adolescents who have become sexually active, screening for sexually transmitted diseases should be an integral part of routine health care. Sexually active adolescents, especially those with multiple partners, are at risk for the following STDs:

- *Gonorrhoea*. A bacterial infection (*Neisseria gonorrhoeae*) that causes vaginal and penile discharge and can lead to pelvic inflammatory diseases in females and infertility in males.
- *Pubic lice*. Pubic lice are generally found in the genital area on pubic hair; but may occasionally be found on other coarse body hair, such as hair on the legs, armpits, mustache, beard, eyebrows or eyelashes. Infestations of young children are usually on the eyebrows or eyelashes. Pubic lice are usually spread through sexual contact. A common misunderstanding is that pubic lice are spread by sitting on a toilet seat. This isn't likely, since lice cannot live long away from a warm human body. Also, lice do not have feet designed to hold onto or walk on smooth surfaces such as toilet seats. Infestation in a young child or teenager may indicate sexual activity or sexual abuse.
- *Candidiasis*. Candidiasis is an infection caused by *Candida* fungi, especially *Candida albicans*. These fungi are found almost everywhere in the environment. If the mix of native bacteria is changed by antibiotics, the body moisture that surrounds native bacteria can also have subtle changes in its acidity or chemistry. This can cause yeast to grow and to stick to surfaces, so that the yeast causes symptoms. Vaginal yeast infections are not usually transmitted sexually. During a lifetime, 75 percent of all women are likely to have at least one vaginal *Candida* infection, and up to 45 percent have two or more. Women may be more susceptible to vaginal yeast infections if they are pregnant or have diabetes. The use of antibiotics or birth control pills can promote yeast infections. So can frequent douching.
- *Syphilis*. This is caused by another bacterium (a spirochete called *Treponema pallidum*). The infection causes ulcers and nodules in the genital area. Serious consequences like damages to body systems and mental illness can take place.
- *Chlamydial Infection*. This infection, caused by the bacteria *Chlamydia trachomatis*, can exist together with gonorrhoea and presents with similar symptoms. Pelvic Inflammatory Disease and infertility are consequences.
- *Hepatitis B Virus Infection*. This is also spread by exposure to infected blood through pin prick, open wounds and blood transfusion. Destruction of the liver (cirrhosis) and cancer of the liver are deadly consequences.
- *Herpes Simplex Virus Infection*. This infection causes painful ulcers in the genital area or in the mouth. The infection increases the risk of contracting HIV for those who get exposed.
- *Human Papilloma Virus Infection*. This infection presents with warts on the genital and anal area. Cancer of the cervix, vulva, vagina, anus and penis are reported consequences.
- *Human Immunodeficiency Virus Infection (HIV/AIDS)*. Being HIV positive means harboring the virus in the body but showing no manifestations of the disease. When symptoms and signs of the disease

start showing, usually in various bodily systems and not limited to the genital area, the condition is now called Acquired Immune Deficiency Syndrome. The disease has no known cure.

Sexually active adolescents who have the following symptoms and observe the following findings on themselves should see a health care provider immediately.

- Vaginal or penile discharge, regardless of character
- Appearance of any rash, lesions, warts, ulcers or nodules in genital area, whether they are painful or not
- Recurring pain or discomfort in genital area, including swollen lymph nodes in the groin
- Itching, burning sensation and pain and discomfort when urinating

The use of condoms is an effective public health measure that prevents the spread of sexually transmittable diseases, and prevents pregnancy as well.

The guidelines on the proper use of condoms are listed below:

- Use condoms made of latex rather than natural membrane.
- Do not use torn condoms, those in damaged packages, or those with signs of age (brittle, sticky, discolored, past expiration date).
- Put the condom on the penis before it touches a partner's mouth, vagina or anus.
- Put the condom on the penis when it is erect. Make sure you have the rim side up so that you can unroll it all the way down to the base of the penis, before the penis comes in contact with a body opening.
- Leave a space at the tip of the condom to collect semen, remove air pockets in the space by pressing the air out towards the base.
- Use only water-based lubricants. Lubricants such as petroleum jelly, mineral oil, cold cream, vegetable oil or other oils may damage the condom.
- Replace a broken condom immediately.
- After ejaculation and while the penis is still erect, withdraw the penis while holding the condom carefully against the base of the penis so that the condom remains in place.
- Do not reuse condoms.

INJURIES

[Also refer to Chapter 11 Safety and first aid]

Injuries can be classified as unintentional, or accidents, and intentional.

Unintentional injuries include falls including biking injuries; drowning and other water-related injuries; traffic and vehicular accidents; and, sports-related injuries. Intentional injuries include suicide (self-damaging behaviors) and homicide. It also includes issues of domestic violence like physical abuse and sexual abuse, especially against women and children.

Preventing injury and violence

There are many practical ways in preventing unintentional injuries for children and adolescents. The following advice can be given to them at every learning opportunity (Adapted from Bright Futures):

- Put baby to sleep on back side or side (back is preferred) to the risk of Sudden Infant Death Syndrome.
- Never shake a baby.
- The back seat of a car, preferably in a rear-facing car seat, is the safest place for baby.
- Do not leave baby alone in tub, pail or bucket and on high places (beds, benches or sofas, changing tables); always keep hand on baby.
- Keep hot liquids and hot appliances (e.g. flat iron) away from baby.
- Keep small and sharp objects out of baby's reach.
- Keep plastic bags out of babies' and children's reach.
- Child-proof home (keep poisons, medicines, cleaning agents away from child's reach; cover electrical outlets; use safety locks and stair gates; fix dangling cords).
- Supervise child when near pets, driveways and streets.
- Do not leave heavy objects and hot liquids on table cloths.
- Supervise play especially in playgrounds.
- Use helmets for kiddie tricycles and bicycles.
- Keep matches, cigarettes, flammable substances and electrical tools out of child's reach.
- Teach child how to properly cross the street.
- Teach child how to swim.
- Keep firearms away from child and teen's reach; keep guns unloaded, locked up or removed from home; keep ammunition in separate place or removed from home.
- Keep emergency numbers handy (poison control, fire department, police department, nearest emergency room).
- Use sun block for prolonged outdoor activities including swimming.
- Install smoke alarms and regularly test if they are working.
- Avoid loud music especially when using earphones.
- Do not drink alcohol when driving, biking, swimming or operating machines.
- Use protective sports gear or protective gear at work or school shops.

The following are important knowledge and skills that children and adolescents need to learn to prevent intentional injuries, including abuse.

- Teach children stranger safety.
- Teach children the difference between "good touch" and "bad touch."
- Teach children to tell a trusted adult (both in and out of the family circle) about any injuries that were intentionally inflicted on them.

ORAL HEALTH

A visit to the dentist for the care of the teeth and mouth is recommended as early as two years old and, at least, every year thereafter.

The use of fluoride containing toothpaste is not recommended until the child is two years old and older. When using toothpaste for brushing teeth, a pea-sized amount is generally sufficient. Use of too much toothpaste, including swallowing of toothpaste, can cause discoloration of the enamel of the permanent teeth because of fluorosis (excess fluoride in the body).

Children younger than two years old can have their baby teeth and mouth

cleaned this way: home care provider can wrap a small finger in a clean piece of cloth and wet with clean water; use this to gently wipe the gums and teeth of the child. Gums and teeth should be cleaned after each feeding.

Table 8. Tooth eruption

20 primary teeth when fully erupted		
Upper teeth	Eruption	Exfoliation
Central incisor	8-12 months	6-7 years
Lateral incisor	8-12 months	7-8 years
Canine tooth	16-22 months	10-12 years
First molar	13-19 months	9-11 years
Second molar	25-33 months	10-12 years
Lower teeth		
Central incisor	6-10 months	6-7 years
Lateral incisor	10-16 months	7-8 years
Canine tooth	17-23 months	9-12 years
First molar	14-18 months	9-11 years
Second molar	23-31 months	10-12 years
32 permanent teeth when fully erupted		
Upper Teeth		Eruption
Central incisor		6-7 years
Lateral incisor		7-8 years
Canine or cuspid		11-12 years
1st premolar or 1st bicuspid		10-11 years
2nd premolar or 2nd bicuspid		10-12 years
1st molar		8-9 years
2nd molar		12-13 years
3rd molar or wisdom tooth		17-21 years
Lower Teeth		
Central incisor		6-7 years
Lateral incisor		7-8 years
Canine or cuspid		11-12 years
1st premolar or 1st bicuspid		10-11-years
2nd premolar or 2nd bicuspid		10-12 years
1st molar		8-9 years
2nd molar		12-13 years
3rd molar or wisdom tooth		17-21 years

Children should actively participate in their own oral health care. However, active supervision and assistance should be provided to them until they are about seven or eight years old. The care of the primary teeth, sometimes referred to as milk teeth or deciduous teeth, is very important. Good primary dentition promotes the development of good permanent teeth.

For babies and young children, sleeping with a milk bottle or pacifier in the mouth should be discouraged. This causes milk-bottle carries that seriously destroy the primary teeth.

To promote good oral health, children and adolescents should avoid foods that are high in simple sugars or starches or foods that are sticky. Raw fruits, vegetables and drinks that are low in sugar should be encouraged.

In addition to increasing the risk of developing cancer of the mouth, smoking also causes discoloration of the teeth and gums. Smoking also causes inflammation of the gums and halitosis or bad breath.

The traditional practice of chewing betel nut (nganga) among adults should also be discouraged. Studies have linked its use to mouth and tongue cancer. It also causes permanent discoloration of the teeth.

Bacteremia or the entry into the blood stream of bacteria from the oral cavity is commonly takes place during dental procedures, including cleaning. Children and adolescents with an underlying structural problem in the heart should be given anti-microbial prophylaxis before the procedure. Advise them to consult their health provider.

PREVENTION OF COMMON DISEASES

[Refer to Chapter 1 Growth and Development for prevention of common diseases of the body systems]

Common infectious diseases like acute respiratory tract infections, pneumonias, diarrheas, tuberculosis, malaria, chicken pox and measles continue to afflict many Filipinos yearly. Knowledge on general measures to protect against these diseases is important.

Children and adolescents should learn important healthy practices that can help in keeping them away from illnesses and diseases. *[Refer to Chapter 3 Personal Health]*. There are also important healthy practices related to our environment that can also prevent common illnesses and diseases. *[Refer to Chapter 6 Environmental Health]*

The Philippines continues to be an endemic area for malaria, with 65 of the 78 provinces of the country still reporting cases. About 10.2 million Filipinos are at risk of the disease, commonly from the following groups:

Always wash hands:

- After using the toilet
- After changing a diaper – wash the diaper-wearer’s hands, too
- After touching animals or animal waste
- Before and after preparing food, especially before and immediately after handling raw meat, poultry or fish
- Before eating
- After blowing the nose
- After coughing or sneezing into hands
- Before and after treating wounds or cuts
- Before and after touching a sick or injured person
- After handling garbage
- When using public facilities - restrooms in bus and train stations, restaurants

farmers, indigenous cultural groups, forest product gatherers, agricultural workers, miners and soldiers.

A National Malaria Control Program continues to be implemented in many communities with the Department of Health and local government units continuing to take the lead roles.

In communities identified as high risk areas, the use of mosquito nets treated with insecticides (long-lasting insecticide-treated bed nets) is an important control measure. The chemical used as insecticide is called pyrethroid. The dose used for treating mosquito nets has very little effect on humans, but has toxic effect on insects.

Other control measures for communities at risk require a coordinated effort between local and national agencies and members of the community.

- Control of mosquito larvae through biologic agents [Mosquito fish, bacterium *Bacillus thuringiensis* var. *israelensis*; fungi (e.g. *Laegenidium giganteum*) or mermithid nematodes (e.g. *Romanomermis culicivorax*)] or chemical insecticides.
- Household protective measures include the following:
 - ☐ Use of the treated mosquito nets (as described above);
 - ☐ Application of insect repellents (such as DEET);
 - ☐ Wearing of light-colored clothes, long pants and long-sleeved shirts;
 - ☐ Use of window screens (if practical)

Environmental measures similar to control of dengue infection are also helpful. The following are simple and practical preventive strategies that can be done at home to prevent *Dengue* infection (from the DOH Health Promotion website)

- Cover water drums and water pails at all times to prevent mosquitoes from breeding.
- Replace water in flower vases once a week.
- Clean all water containers once a week. Scrub the sides well to remove eggs of mosquitoes sticking to the sides.
- Clean gutters of leaves and debris so that rain water will not collect as breeding places of mosquitoes.
- Old tires used as roof support or discarded should be punctured or cut to avoid accumulation of water.
- Collect and dispose all unusable tin cans, jars, bottles and other items that can collect and hold water.

Accurate health information

Philippine culture is replete with numerous folk practices on sickness and healing. Some have good scientific backing (e.g. medicinal plants endorsed by the DOH). Others, however, have no basis at all and can, in fact, be

harmful to the person.

An important life skill on health is one's capacity to be discerning on what is factual, what is not true and what is potentially harmful.

The following common folk beliefs have no known scientific basis:
(*Selected from the Encyclopedia of Philippine Folk Beliefs and Customs*)

- Pregnant woman having her picture taken causes child's abnormalities.
- Pregnant woman fond of a child makes child thin and sickly.
- Eating seeds and jumping after meals cause appendicitis.
- Cutting hair of child under one year old causes baldness.
- Sleeping with wet hair causes blindness.
- Eating various fruits causes stomachache.
- Asthma is caused by carabao meat.
- Anemia is caused by afternoon baths. .
- Appendicitis is cured by eating unripe papaya.
- Cures for asthma: broiled centipede, coconut oil, dog meat, lizard.
- Cures for pimples: blood from first menstruation, fresh egg from a hen, nicotine, powdered intestine of cockroach, rice wash.

Examples of folk practices that are harmful or potentially harmful:

Removing lice at night invites death. This has no scientific basis. In fact, one of the accepted ways of treating head lice requires the application of the lotion on the scalp for a period of eight to 12 hours, usually at night.

Leprosy is a hereditary disease. Leprosy is a communicable disease transmitted through prolonged close contact with a person infected with leprosy or through exposure to infectious materials like nasal secretions from a person infected with the disease.

Tobacco a cure for abscess. Applying tobacco on an abscess can worsen the on-going infection. An abscess is treated with antibiotics or by drainage of the pus. This is done under sterile conditions.

A child born with feet first (breech) has power to heal fractured bones. Any suspected fracture in any bone of our body must be immediately evaluated by a trained health care provider. There is a short window period during which a fracture or dislocation need to be attended to in the right way. Beyond this period, deformities, sometimes permanent, begin to set in.

Cat's paw removes fish bone stuck in one's throat. This practice can potentially harm the person from cat scratches or bites, both of which can lead to serious infections.

Kerosene poured on hair at night removes lice. Kerosene is not an accepted

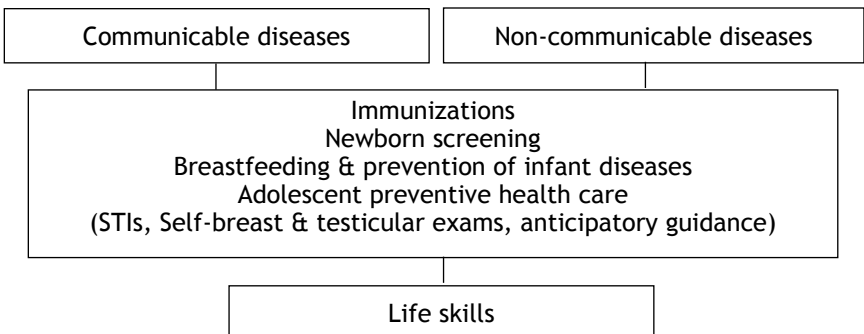
treatment for lice and its use especially in areas in the country that uses candles or gas lamps for lighting is hazardous.

Bisayan mothers use ashes from smoke as ingredient for child medicine. including its application on cut umbilical cord. Ash from smoke may be contaminated with microorganisms and has hazardous chemicals in it. It should never be used as an ingredient in any medicine. Its use in a freshly cut umbilical cord can lead to tetanus neonatorum.

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FRAMEWORK FOR DISEASE PREVENTION



CHAPTER 6

SUBSTANCE USE AND ABUSE

The 1999 Household Survey on the Nature and Extent of Drug Abuse in the Philippines estimated that there were 3.4 million users of drugs of abuse in the Philippines. Of these, 1.8 million used regularly. In its 2004 annual report, the Dangerous Drugs Board, quoting the above survey, speculated that over the 5 years since the survey was done, it appeared that the numbers had significantly increased. The drug abuse problem in the country is further complicated by the fact that the Philippines is an archipelago with an aggregate coastline longer than that of the continental United States. This coastline is very difficult to patrol and this has made the country an important international trans-shipment point in the illicit drug trade.

The problem of drug abuse is a major threat to the youth of our country. But even more than that, because of the huge amounts of money to be made in the trafficking of illegal drugs, even national governments can be corrupted and destabilized. The solution to the drug problem partly involves efforts to decrease supply such as interdiction of shipments and the arrest of drug pushers and drug lords. It also partly involves the treatment and rehabilitation of the drug abusers. But most of all, it involves preventing drug abuse in the first place. Teachers have a critical role to play in educating students about the facts of drug abuse as well as the life skills needed to keep our young people free of drugs.

In this chapter, the concept of drug abuse and dependence is first discussed, after which specific drugs of abuse and their effects are outlined. While there are many drugs of abuse, the focus will be on the gateway drugs—alcohol and tobacco—because almost all drug abusers and dependents begin with these two substances. A brief outline of the most common drugs of abuse follow. Treatment options are then discussed. Finally, resistance skills and life skills to help young people avoid drugs of abuse are discussed.

DRUG ABUSE AND DRUG DEPENDENCE

Psychiatrists make a distinction between drug abuse and drug dependence. Both conditions have in common the continued and compulsive use of the drug despite adverse psychological, physiological, and social consequences. For instance, a young person may be experiencing failing grades, frequent fights with parents, and frequent imprisonment due to his use of shabu, but despite these adverse consequences, he continues to use shabu. Another example would be a smoker who has heart; the smoker knows that smoking is bad for his heart disease, but he continues to smoke anyway. What distinguishes the drug abuser from the drug dependent would be the presence of tolerance and withdrawal in the drug dependent.

Tolerance is the phenomenon where the drug user needs to take more and more of his drug to get the same effect that he wants. *Withdrawal* is the phenomenon in which the body has adapted to the constant presence of the drug and therefore reacts in unpleasant ways when the drug is not present. For instance, for those who are dependent of alcohol, six to eight hours after they stop drinking, their hands begin to shake, they become irritable, and they have difficulty sleeping. In severe withdrawal, alcohol dependents can have convulsions, delirium and fever of over 40 degrees Centigrade that they may die from.

Note that in the above descriptions, the **amount** of drug is not important; what is important is the impact of the drug on the life of the user.

It is clear from the above discussion that both drug abuse is harmful and drug dependence even more so since it is the result of prolonged drug abuse. For our purposes in this chapter, however, we will refer to the person who uses drugs as the “drug abuser” and the substance that he uses as the “drug of abuse” or the “drug.”

Reason for addiction

The short answer to this is that drugs of abuse make the person using them feel good. This makes him use it again and again in order to get that “good feeling”. Drugs of abuse produce pleasurable feelings—the “high”—through the action of chemicals in the brain called neurotransmitters. One neurotransmitter in particular—dopamine—is responsible for such feelings. There are particular areas in the middle of the human brain that contain high concentrations of brain cells, or “neurons” that release dopamine. This neurotransmitter then latches on to special dopamine receptors on other neurons in this area to exert their action. The result is a feeling of pleasure and well-being. This area of the brain has therefore been referred to as the “reward pathway”.

Development of drug abuse and dependence

Because the act of taking the drug is rewarded with a “good feeling” every time, a person is encouraged to repeat the action. It is a high that is easy to achieve—a shortcut to happiness, so to speak. For those who are vulnerable to drug abuse (see the section on risk factors) their life circumstances make them prone to using the drug more than others. Continuous drug use leads to many adverse consequences in their life which encourages them further to take their drug in order to avoid the pain of those consequences. A vicious cycle is then created in which adverse consequences lead to more drug abuse leading to more adverse consequences. Practiced long enough, drug abuse eventually leads to tolerance, withdrawal and drug dependence.

Drug abusers

Many drug abusers engage in acts that are harmful to themselves and to society. But to a great extent, they are victims of the drug that they abuse and the structures of society that promote drug use (i.e. the drug syndicates and the people who protect them). There is some scientific evidence that show some people are actually genetically vulnerable to become drug abusers—they have “defective” genes that make them prone to drug abuse once they are exposed to the drug and to an environment that has risk factors for drug use.

In short, they are people who are both physically and emotionally sick and must therefore be treated accordingly. Their lives become organized around obtaining their drug and using it. The slogan “Treat the user; jail the pusher,” sums it all up. How to treat the drug abusers are discussed later in the chapter (see the section on treatment approaches).

GATEWAY DRUGS

Gateway drugs are those that people use initially that may eventually lead to the abuse of illegal drugs. The gateway drugs are alcohol and tobacco. Not everyone moves from alcohol and tobacco to the illegal drugs, but if a survey of current drug abusers is taken and they are asked whether they had used either alcohol or tobacco, one will find that the majority of them started with these drugs. Alcohol and tobacco, in and of themselves, are also addictive.

Alcohol and tobacco are drugs

Alcohol is a sedative drug that, when ingested, acts as a depressant to the central nervous system. However, at blood alcohol levels of about 50mg/dL, it initially depresses the inhibitions which causes a feeling of euphoria—and this accounts for the talkativeness and boisterousness of people who have had a drink or two at parties. When taken in excess, it alters normal functions of the body and harms body organs. When taken chronically, it can lead to dependence.

Tobacco contains nicotine which has anxiety-reducing properties. It is also highly addictive. U.S. statistics show that 85 percent of teenagers who smoke two or more cigarettes will eventually become regular smokers. Ninety percent of current smokers have tried to quit but have failed. Even after the terrifying experience of a heart attack, 70 percent of smokers cannot quit in spite of the knowledge that smoking will aggravate their medical condition.

In the Philippines, approximately four in 10 students reported smoking cigarettes (i.e. even one or two puffs): 42.8 percent in 2000 and 41.9 percent in 2003. While this decline is encouraging, other findings are of major concern. Approximately eight in 10 students reported seeing pro-tobacco messages on billboards, in newspapers and magazines. Students who smoke also reported little difficulty purchasing cigarettes in stores. To reduce tobacco use among adolescents in the Philippines, continued efforts are needed to monitor these behaviors and to develop, evaluate, and disseminate effective prevention strategies. So much attention has been placed on shabu and ecstasy that the effects of these legal gateway drugs have been neglected.

ALCOHOL

There are three common types of alcohol in the consumer market: methanol (methyl alcohol), isopropanol (isopropyl alcohol) and ethanol (ethyl alcohol),

- *Methanol or wood alcohol* is the type of alcohol found in shellac, thinner and paints. It is most commonly used in industrial firms and very toxic when consumed and may even cause death.
- *Isopropyl alcohol* is the type found in rubbing alcohols and is used as a disinfectant to kill germs. Like methanol, it is toxic when ingested.
- *Ethanol* is also known as grain alcohol because it is formed by fermentation of fruits and grains. Fermentation is a chemical process whereby plant products are converted into alcohol by action of yeast cells on carbohydrate materials. This is the type of alcohol found in alcoholic beverages. In this chapter, the word “alcohol,” refers to ethanol.

The concentration of alcohol in alcoholic beverages is commonly expressed as a digit followed by the word “*proof*.” For example gin in the Philippines is labeled “80 proof.” If you divide the digit by two, the resulting number represents the percent of alcohol by volume in the drink. For example, gin that is “80 proof” is 40 percent alcohol. [see Table 9]

Consumption of alcohol

Alcohol does not need to be digested and can already be absorbed as is. Once it enters the mouth, a small percentage of alcohol is already absorbed into the bloodstream through tiny capillaries. About 20 percent of alcohol is

absorbed in the stomach and causes increased secretion of acids. The rest of the alcohol goes to the intestines and to the liver where it is eventually broken down (or *metabolized*).

During metabolism (be it in the stomach as some researches say or in the liver), alcohol is changed to acetaldehyde through an enzyme called alcohol dehydrogenase (ADH). The acetaldehyde is then acted on by another enzyme, acetaldehyde dehydrogenase, that rapidly converts acetaldehyde to acetic acid (vinegar). Acetic acid is further oxidized into water and carbon dioxide and is eliminated.

Table 9. Alcoholic drinks

Product of fermentation mainly from fruits and grains:		
Fruit/Grain	Product	Alcohol content
Grapes with pulp	Red Wine	12% to 14%
Grapes (extract only)	White Wine	12% to 14%
Cereals: Wheat, Barley, Rye	Beer	3% to 6%
Corn	Bourbon	18%
Malt	Scotch	45%
Molasses	Rum	45%
Sugar cane & cassava	Gin	45%

Many Asians metabolize acetaldehyde slowly causing an accumulation of acetaldehyde. This results in the typical “flushing reaction” where the drinker turns red. If enough acetaldehyde accumulates, the heart can beat faster and the blood pressure can go down.

It is important to note that the liver of a 50kg man can only metabolize 12.5 ml (a little less than half an ounce) of alcohol in one hour. If more than this amount has been taken, the rest of the unmetabolized alcohol circulates in the different parts of the body through the bloodstream. If there is enough circulating alcohol, a person’s central nervous system starts to feel the tranquilizing effects of alcohol. The smaller the body weight of the individual, the less alcohol it is able to metabolize at any one time.

Blood Alcohol Concentration

Blood Alcohol Concentration is the amount of alcohol present in the bloodstream. It is given in percentage; the higher the BAC, the greater is the possible harmful effects of alcohol to the body.

Note that the person’s BAC depends on the following factors:

- *Gender of the drinker.* Females metabolize alcohol more slowly and will therefore have higher BAC levels for the same volume taken compared to men
- *How much alcohol a person drinks.* The larger the amount, the higher the BAC.
- *How fast the person drinks.* Since the liver can only metabolize half an ounce of alcohol per hour, if you drink more than this amount, BAC

levels will rise. If enough alcohol is taken, the BAC could rise to life-threatening levels.

- *How much the person weighs (body size).* The smaller the body weight, the greater the BAC for the same volume of alcohol.
- *How much the person has eaten.* Food, especially fatty food, delays the absorption of alcohol resulting in a lower BAC compared to that produced by drinking alcohol on an empty stomach.

Effects of alcohol on the different parts and systems of the body

All alcoholic beverages contain *empty calories* or calories without essential nutrients needed by the body. Malnutrition and vitamin deficiencies are therefore quite common among alcoholics because they prefer alcohol over other more nutritious caloric sources. Because alcohol is a preferred source of fuel for the body, fats that would ordinarily have been used accumulate, usually in the abdomen, thus giving rise to the “beer belly” common among alcoholic drinkers. Harmful effects of alcohol are outlined in Table 10.

Misconceptions about alcohol

Alcohol improves digestion. Alcohol causes the stomach to produce more acid. While that does not necessarily improve digestion, chronic exposure to higher than normal levels of acid can damage the protective lining of the stomach causing ulcers.

Alcohol makes a person think more clearly. Not true. Alcohol depresses normal inhibitions causing people under the influence to do things that they would not ordinarily do had they been thinking clearly. In a test done on race track drivers, the subjects were asked to drive their race cars around the track, first without alcohol and then a second time after they had a drink of alcohol. All of them said that they had driven better after their drink; but objective tests of performance demonstrated that they had all performed worse after drinking. The test demonstrates how judgment can be affected by alcohol.

In the person who is physically dependent on alcohol, however, if he stops drinking, he will undergo the mental and physical rigors of withdrawal. If he takes alcohol, the withdrawal symptoms will disappear, hence giving him the impression that alcohol makes him “think more clearly” when it actually just removes the withdrawal.

Alcohol makes a person braver. Alcohol removes normal inhibitions—which is why he gets to do things that he would have been afraid to do had he not been under the influence of alcohol. But the “courageousness” that results is a dangerous one precisely because of the loss of judgment that accompanies removal of normal inhibitions.

Table 10. Harmful effects of alcohol on the body

Body Part/ System	Effects
Brain	Acute: poor coordination of extremities. Short term: hangovers; blackouts (can't remember what happened while drunk). Long term: Brain damage; dementia; Korsakoff's syndrome; neuropathies
Sense organs	Eyes- tunnel vision; Ears- impaired hearing
Heart	Short term: Angina Pectoris. Long term: Cardiomyopathy
Blood	Long term: Anemia
Blood vessels	Acute: Narrowing of visceral blood vessels; widening of peripheral blood vessels Short term: Increased blood pressure
Lungs	Acute: Weakening of cough reflex. Short term: Aspiration Long term: Pneumonia
Esophagus	Acute: Enlarged blood vessels, scars, bleeding Long term: Cancer
Stomach	Acute: Increased production of gastric juices Short term: Ulcer, gastritis. Long term: Cancer
Intestines	Acute: Diarrhea. Short term: Ulcers & destruction of enzyme system. Long term: Duodenal Cancer
Pancreas	Short term: Hemorrhagic Pancreatitis
Liver	Acute: Fatty liver. Short term: Hepatitis Long term: Cirrhosis
Reproductive System (M)	Long term: Feminization- enlargement of breast, lowered testosterone level, testicular shrinkage
Reproductive System (F)	Long term: Irregular menstruation, menses stop, Fetal Alcohol Syndrome in babies born to alcoholic mothers
Muscles	Acute: Impaired coordination of muscles. Short term: Loss of balance. Long term: Reduced muscle mass
Bones	Long term: Osteoarthritis, gouty arthritis, uric acid
Immune system	Long term: Increased susceptibility to infections

Alcohol heats up the body (pampainit ng katawan). Alcohol causes the blood vessels to dilate, and when the small blood vessels close to the skin dilate, a feeling of warmth results. But what actually is happening is that the body is losing heat to the environment precisely because the blood vessels are dilated; more blood is allowed to come to the surface of the body and this enhances convection of heat from the body to the outside. So the body actually loses more heat. In cold countries, many alcoholics actually die of hypothermia, a condition where the body loses too much heat and the body systems shut down as a result.

Alcohol is good for the heart. This is tricky, and the teacher must exercise good judgment whether or not to use the following information. Yes, it has been shown in Caucasians that those who take one to two drinks a day (one drink = one regular bottle of beer or one glass of wine or one shot or hard liquor) have a 32 percent lower risk of dying from coronary heart disease compared to abstainers. But anything over this amount becomes harmful for the drinker. Caucasians are also generally bigger than Filipinos and also metabolize alcohol faster than Filipinos (and Asians in general). At this point, evidence is still being gathered and no clear recommendations have been given regarding the amount of alcohol to take given the dangers and potentials for abuse of alcohol.

What seems to be clear are the following:

- That it might make sense to take some alcohol after the age of 40 when the risk of heart attacks increase, but there is NO MEDICAL REASON for taking it earlier than that. In fact, there seems to be some evidence that females who take alcohol regularly at an early age have a higher risk for breast cancer.
- That in the event that a “therapeutic” dose of alcohol will be recommended in the future, it will definitely be lower for Asians than for Caucasians, and it will definitely not reach the levels that Filipinos usually drink when they engage in drinking sessions with friends.
- That medical clearance will probably be needed before starting “therapeutic alcohol doses” because alcohol may be harmful for certain diseases (like gout and diabetes).

TOBACCO

Tobacco is composed of the dried and cured leaves of the tobacco plant *Nicotiana tabacum*. It contains as many as 500 vaporous compounds which are toxic, active, poisonous, and carcinogenic like nicotine, tar, nitrogen, oxygen, carbon monoxide, hydrogen cyanide, benzene, methane and formaldehyde. Of these harmful compounds, tar, nicotine and carbon monoxide are the most well known. The effects of tobacco on the body are outlined in Table 11.

Tar

Tar is a particulate compound in cigarette smoke that, when concentrated, is a brownish viscous substance that can stain the fingers, teeth, tongue, trachea and lungs. It is known to be carcinogenic (cancer-causing).

Nicotine

Nicotine is the most abundant particulate matter in cigarette smoke. It is an odorless and colorless compound responsible for the psychoactive and addictive behavior in smokers. While nicotine does not cause the intense

highs associated with other drugs of abuse, it does reduce anxiety at low doses, which explains why people smoke more when they are under stress. At high doses, nicotine increases performance on tasks demanding alertness. The smoker can therefore vary the rate of smoking depending upon the effect that he wants. Of course, people don't consciously say, "I am under stress so I will take low doses," or "I need to be alert so I will take high doses." What happens is that the smoker adjusts his dose unconsciously and automatically depending on his need. In effect, what happens is that the smoker experiences an immediate reward after every puff—either relief of anxiety or increased alertness—which encourages him to repeat the behavior. After overcoming the initial discomfort of tobacco smoke, smoking easily becomes habitual and very difficult to remove.

What makes it more difficult to stop is the fact that there are withdrawal symptoms that appear when the habitual smoker suddenly stops. The withdrawal syndrome consists of craving for a smoke, irritability, frustration, anger, anxiety, difficulty of concentrating, increased appetite and weight gain. The unpleasantness of these symptoms usually overcomes any good intention by the smoker to stop, so the habit perpetuates itself.

In addition, nicotine, together with carbon monoxide, is the major risk factor for cardiovascular diseases like heart attacks and hypertension.

Carbon monoxide

Carbon monoxide is the same gas that emanates from a car's exhaust pipe. It impairs the capacity of blood to supply oxygen to the vital organs in the body and it is also responsible for the shortness of breath among smokers.

Some interesting facts about smoking:

- Everyday, 16 million Filipinos, or one fifth of the population, light up a total of 162 million cigarettes.
- According to World Health Organization someone dies from tobacco use every 6.5 second.
- It has been estimated that tobacco is responsible for at least one million premature deaths annually throughout the world.
- Research suggests that people who start smoking in their teens and continue for two decades or more will die 20 to 25 years earlier than those who never light up because of the added health risks that smoking poses.
- The Philippine Tumor Registry from 60 hospitals shows that lung cancer is number 1 among males afflicted with cancer and is emerging as number 3 among females.

Non-smokers are affected by cigarette smoke

Smoking does not just affect the smoker. Everyone around him inhales the

Table 11. Effects of tobacco and cigarette smoking

Body Part	Effects
Hair	Hair loss
Eyes	Twice as likely to get cataracts: either directly damaging the lens from the outside or by releasing chemicals into the lungs that travel up to the bloodstream to the eyes. Macular Degeneration is an incurable eye disease caused by the deterioration of the central portion of the retina called macula.
Skin	Wrinkling. Smoking prematurely ages skin by wearing away the elastic fibers of the inner layer of the skin called the dermis. Yellowish-brown staining of the fingers. Psoriasis, a non-contagious inflammatory skin condition characterized by pustules, redness and scaling
Ears	Hearing loss: current smokers were 1.69 times as likely to have a hearing loss as nonsmokers. Increased susceptibility of children of smokers to ear, nose and throat problems
Teeth	Tooth decay, plaques, tooth loss
Lungs	Emphysema, chronic bronchitis, lung cancer (90 percent of lung cancer deaths in females and 80 percent of deaths in males)
Bones	Osteoporosis. Bone density decreases through alterations in sex hormone metabolism as well as alterations on the vitamin D-pituitary hormone axis
Heart	Heart diseases: hypertension, clogged coronary arteries, heart attacks
Stomach	Peptic ulcers. Cigarette smoke reduces the synthesis of mucus in the stomach hence decreasing protection against gastric acids and delaying ulcer healing.
Immune System	Systemic lupus erythematosus and rheumatoid arthritis
Reproductive System (F)	Decreased pregnancy rate, lower bone density, infertility, increased incidence of early menopause, cervical cancer, spontaneous abortions, preterm delivery, still births
Reproductive System (M)	Abnormal sperm
On infants with smoking mothers	Sudden Infant Death Syndrome, low birth weight, mental retardation

smoke he produces—referred to as “second hand smoke”—and can develop the same complications as the smoker if exposed long enough. It is almost like the non-smoking bystander had been smoking as well—hence the term “passive smokers.” Children are especially vulnerable to second-hand smoke

if there are active smokers at home. Compared to the child who is not exposed, the child who smokes passively is at increased risk of sudden infant death syndrome where the child is just found dead in the crib without apparent explanation. Compared to unexposed children, these passive smokers also have twice the rate of serious lung infections, twice the likelihood of developing asthma, five times the rate of developing allergic symptoms, and have increased susceptibility to deafness and other ear, nose and throat problems.

MARIJUANA

“Marijuana” is the street name for the dried, chopped plant parts of *Cannabis sativa*, the hemp plant. Some other street names are *pot*, *Mary Jane*, *MJ*, *weed*, *grass*, and *damo*. The plant material is usually rolled in cigarette paper or some equivalent in order to make a “joint” which is then smoked. Sometimes, the marijuana is placed in food such as brownies and is eaten. Smoking, however, is the most popular method of abuse and produces the fastest effects.

Effects of marijuana

The active ingredient of marijuana that accounts for most of its psychoactive effects is 9-tetrahydrocannabinol (THC). One “joint” of marijuana will contain approximately 500-750 mg of plant material of which 1.2-4 percent is THC. Low to moderate doses will produce euphoria, a relaxed state, a heightening of the senses and sometimes changes in time and space perception. High doses can produce a spectrum of unpleasant symptoms ranging from mild anxiety to paranoia, acute psychosis, delusions, hallucinations, bizarre behavior.

The smoke from marijuana is more irritating than tobacco smoke, containing four times more insoluble smoke particulates than that from filtered cigarettes. As a result, it can cause hoarseness, sore throat, and bronchitis. Those who smoke regularly and for long periods of time are at risk for developing lung cancer as well as chronic lung diseases.

Marijuana can also affect the heart, causing rapid heart rates and a drop in the blood pressure when a person stands up causing dizziness and darkening of vision.

While physical dependence to marijuana does not seem to occur, psychological dependence does. It is also considered a gateway drug and some studies show that one in three who use marijuana eventually use more serious drugs of abuse later on.

OTHER DRUGS OF ABUSE

All of the drugs listed in Table 12 produce pleasant sensations ranging from a sense of relaxation to euphoria. The effects refer to the adverse effects that can occur either with overdose or with chronic use.

Table 12. Drugs of abuse and their effects.

Classification	Effects	Examples
Stimulants (other than methamphetamine and MDMA) also known as uppers	Talkativeness, hyperactivity, increased heart rate, increased blood pressure	<ul style="list-style-type: none"> • Cocaine: Peruvian Lady, white girl, flake, happy dust, nose candy, coke, C • Caffeine • Yaba or Crazy Drug
Sedatives or Sedative-Hypnotic Drugs may reduce anxiety and excitement. Street names are downers, barbs, candy, peanuts & pinks.	Poor judgment, dependence, anxiety, convulsion and death	<ul style="list-style-type: none"> • Barbiturates Benzodiazepines: Diazepam (Valium) & Clonazepam (Rivotril, also known as ekis pinoy) • Methaqualone (Mandrax, also known as ekis or kulit)
Hallucinogens: also known as psychedelic drugs	Primarily affect sensation, thinking, self-awareness and emotions	<ul style="list-style-type: none"> • d-lysergic acid diethylamide (LSD) • Phencyclidine (PCP) • Peyote and Mescaline • Dimethyltryptamine (DMT) • Cohoba • Cannabis or Marijuana
Narcotics or Opiates are drugs that relieve pain, often inducing sleep. Narcotics, by definition means deadening, numbing, stiffening. They depress the nervous system either partially or totally.	Immediate: restlessness, small pupils, cold, moist and bluish skin color, slowed breathing, and death. Withdrawal syndrome: uneasiness, diarrhea, abdominal cramps, nausea, sweating, running nose and eyes, goose flesh	<ul style="list-style-type: none"> • Opium • Morphine • Codeine • Semi-synthetic & synthetic narcotics (Opioids) • Heroin • Hydromorphone • Oxycodone (Percodan) • Buprenorphine (Stadol) • Meperidine (Demerol) • Nalbuphine (Nubain)
Inhalants are chemicals that produce vapors resulting in psychoactive effects.	Immediate: confusion/disorientation, aggressive behavior, hallucinations, nausea, vomiting. Long Term: memory loss, inability to think, muscle cramp & weakness, abdominal pain, damage to nervous system, kidneys, liver	<ul style="list-style-type: none"> • Household Chemicals like aerosols, airplane glue, cleaning fluids, paint thinners • Industrial Chemicals like gasoline and kerosene

SHABU

The chemical name for shabu is methamphetamine belonging to a class of substances called *amphetamines* that exert their action mainly through neurotransmitters called *catecholamines*. These neurotransmitters are stimulatory in nature, which is the reason why amphetamines are also called “uppers.” Methamphetamine is the most commonly abused amphetamine in the Philippines. Among the slang names of methamphetamine are *shabu*, *sha*, *S* and *bato*.

Intake of shabu

Methamphetamine may be taken by mouth or it may be injected, but in the Philippines, the usual way it is taken is by heating the methamphetamine crystals and inhaling the smoke that is produced. When taken this way, methamphetamine causes an almost immediate and intense high because it reaches the brain more quickly as compared to taking it by mouth. Injecting it into the veins also causes the high to be experienced quickly and intensely, but inhaling is more convenient and does not involve any pain.

Effects of shabu

After taking methamphetamine, the drug abuser feels euphoric, alert, and wide awake. He becomes very talkative and feels full of energy. Many who eventually became addicted to shabu started using because they found it helpful in their work or in their studies. Methamphetamine also depresses the appetite, and some users of shabu started taking it because they wanted to lose weight. Eventually, however, as they got deeper and deeper into shabu and started encountering its side effects, any benefit they initially derived from it disappeared. Poor work and academic performance is usually the norm the longer shabu is used.

Tolerance also develops, which causes the drug abuser to use more and more shabu to get the same effect that he wants. At these higher doses, however, methamphetamine can cause restlessness, tremors and palpitations. At even higher doses, there can be confusion, aggressive behavior, hallucinations, panic attacks, and convulsions. Methamphetamine causes the blood pressure to shoot up and this can result in strokes and heart attacks to occur earlier in life than they ordinarily would. Chronic methamphetamine use also causes the patient to develop recurrent paranoid thoughts.

ECSTASY

Ecstasy is the street name for MDMA (methylene-dioxy-methamphetamine). From the chemical name, it can be discerned that MDMA and methamphetamine are related to each other. MDMA also works through the same neurotransmitters as shabu to produce its high. Unlike meth-

amphetamine, MDMA is usually taken by mouth as tablets. These tablets are usually manufactured in home or backyard settings, which is why the amount of Ecstasy varies from tablet to tablet. But on the average, every tablet will probably contain about 120 mg of the chemical.

Effects of ecstasy

MDMA effects are similar to methamphetamine, but in addition, it makes users gregarious, amorous, and desirous of touching or hugging others, the latter effect of which has caused it to be called the “hug drug”. It is used at parties or clubs and the users feels so energetic that they dance and party all night, not noticing that they are getting dehydrated. Some cases that land in the emergency room do so because they collapsed from exhaustion and dehydration.

RECOVERY FROM DRUG ABUSE

The drug abuser first needs to stop his drug use and undergo detoxification. The objectives of detoxification are:

- To remove the drug from his body
- To treat the complications that have developed due to his drug abuse
- To treat withdrawal symptoms that may arise as a result of his drug use

After detoxification, he must undergo some form of rehabilitation with professionals who have experience in handling drug abusers (i.e. psychiatrists, addiction counselors). The type of rehabilitation (whether in-patient or out-patient), the method of rehabilitation and the length of treatment will depend upon a thorough assessment by the medical and addiction professionals.

Self-help groups like Alcoholics Anonymous and Narcotics Anonymous are also available (their website is www.NAphilipinas) to supplement rehabilitation.

The problem, however, is that most drug abusers don't want to get treatment. In fact, most of them think that they don't need treatment.

Convince a drug abuser to get treatment

If a drug abuser is a clear danger to himself and to other people, then it is better to have him picked up either by the authorities or by medical personnel and then forcibly brought to treatment. If, however, there is time to convince the drug abuser to accept treatment willingly, then the best course of action would be to let him undergo a “bottoming out” process.

Very often, the drug abuser does not feel the consequences of what he is

doing to himself because whenever he gets into trouble, the people who care about him—usually his family—try to rescue him from the painful consequences of his drug use. For instance, when he is picked up by the police, a family member pays his bail or bribes the officers to release him. If he is unable to hold a job because of his drug use, he is given food, clothing and shelter anyway by caring family members. Unfortunately, when family members rescue the drug abuser, they are also unwittingly allowing the drug abuser to continue using. Because he never feels the pain of the consequences of his use, he has little motivation to get treated. Hence these rescuing behaviors are called *codependent behaviors*.

Logically, therefore, family members must stop their codependent behaviors. They must stop rescuing their drug abuser. They must allow him to feel the pain that would logically occur were he to face the consequences of his actions. They must withdraw their material support of the abuser UNTIL SUCH TIME THAT THE ABUSER IS WILLING TO GET TREATMENT. Note that this approach is not meant to punish the drug abuser. It is meant only to let the consequences fall on the person who should carry them in the first place. When the drug abuser has already “bottomed out” and communicates his willingness to get treatment, then the family should resume their support PROVIDED THAT he enter and complete an appropriate rehabilitation program that the family has chosen for him.

Unfortunately, in our culture, the above approach can be rather difficult to implement. The reason for this is that families are often in denial that their family member is into drugs. And even if they no longer deny it, our culture dictates that family members in trouble should be helped and supported as much as possible. Not doing so is frowned upon and is considered shameful by the rest of the community.

Nevertheless, the above approach, described by some as “tough love” is what is needed in dealing with the drug abuser.

Laws governing the issue of drug abuse

Republic Act 9165 entitled “The Comprehensive Dangerous Drugs Act of 2002” is the law that has been crafted to address the issue of drug abuse in the country. Its most important provisions about dangerous drugs and their precursors and essential chemicals are as follows:

- Manufacture, importation, sale, trading, administration, dispensation, delivery, distribution, and transportation are to be strictly regulated. Engaging in any of these acts without authorization by law will be penalized severely with some penalties as severe as life imprisonment with a fine of up to Php 10 million depending upon the circumstances.
- Additional severe penalties are:
 - 12-20 years imprisonment plus a fine of Php100,000 to 500,000

for diversion of precursors and essential chemicals from legitimate uses to the production of dangerous drugs

- ❑ 12-20 years imprisonment plus a fine of Php100,000 to 500,000 for the manufacture or delivery of equipment and other paraphernalia for dangerous drugs
- ❑ Life imprisonment and a fine of Php500,000 to 10,000,000 for unauthorized possession equal to or exceeding the following quantities of dangerous drugs: 10g. of opium, 10g. of morphine, 10g. of heroin, 10g. of cocaine, 50g. of methamphetamine, 10g. of marijuana resin or resin oil, 500g. of marijuana, 10g. of other dangerous drugs such as ecstasy, LSD, and other drugs that may be added by the Dangerous Drugs Board
- ❑ Lighter but still significant penalties for possession of lesser quantities, evidence of use of the above, possession of paraphernalia or equipment for use of the above, maintenance of a den where the above are used, cultivation of marijuana and other plants classified as dangerous drugs, unnecessary prescription of dangerous drugs
- Assigning to the Department of Health the responsibility for overseeing and monitoring all drug rehabilitation programs, both government and private
- Creating a mechanism allowing drug abusers to get treatment, either voluntarily or by force of law, especially for first-time offenders
- Setting up of regulations and standards for drug testing centers and stipulating rules for drug testing of:
 - ❑ Driver's license applicants
 - ❑ Applicants for permit to carry firearms
 - ❑ Students of secondary and tertiary schools
 - ❑ Officers and employees of public and private offices
 - ❑ Officers and members of the military and law enforcement agencies
- Involving schools in the fight against drug abuse by including drug abuse prevention in school curricula and empowering school teachers to apprehend any violators of the law on dangerous drugs
- Establishing drug-free workplace programs in public and private organizations
- Defining the roles of the Dangerous Drugs Board and the Philippine Drug Enforcement Agency as lead agencies in the fight against drug abuse

Drug abuse prevention

The best approach, however, is to prevent our young people from getting into drugs in the first place. In order to help them avoid drugs, it is important to understand what protective factors we must enhance and what risk factors we must avoid. We must also teach our young people decision-making skills and resistance skills so that they can refuse drug offers and make responsible choices for themselves.

Risk factors that make young persons vulnerable to drug abuse

- Being reared in a dysfunctional family
- Having negative self-esteem
- Being unable to resist peer-pressure
- Having difficulty mastering developmental tasks
- Being economically disadvantaged
- Having a genetic background with a predisposition of chemical dependency
- Experiencing family disruption
- Experiencing depression
- Having difficulty achieving success in athletics
- Having attention deficit hyperactivity disorder
- Having immature character disorder

Protective factors against drug abuse

- Being reared in a loving and functional family
- Being involved in sports of interest
- Having a positive self-image
- Having the right circle of peers
- Feeling a sense of accomplishments
- Having healthful attitude during competition and athletic performance.
- Having the ability to manage stress
- Having adult role models including parents who do not misuse and abuse drugs
- Being active in curricular and extra-curricular activities
- Having a positive outlook in life
- Being able to talk to trustworthy adults such as parents, teachers, spiritual directors and friends in order to acknowledge and express one's feelings and thoughts
- Being able to handle unpleasant feelings
- Discovering and developing talents and special interests

By minimizing the risk factors and enhancing the protective factors, it is possible to move our young people away from drug use and in the direction of health and well being.

LIFE SKILLS

Decision-making skills

Clearly describe the situation you face. If no immediate decision is necessary, describe the situation in writing. If an immediate decision must be made, describe the situation out loud to yourself in a few short sentences. Being able to describe a situation in your own words is the first step in clarifying

the question.

List possible actions that can be taken. If there's no immediate action necessary, list down all options for possible action. If an immediate decision should be made, state possible actions out loud to yourself.

Share your list of possible actions to a responsible adult. Sharing your list to a responsible adult is helpful. This person can examine your list and his/her wide range of experiences will guide him/her in giving your advice or comments.

Carefully evaluate each possible action using six criteria. Ask each of the six questions to learn which decision is best.

- Will this decision result in an action that will promote my health and the health of others?
- Will this decision result in an action that will protect my safety and the safety of others?
- Will this decision result in an action that will protect the laws of the community?
- Will this decision result in an action that will show respect for myself and others?
- Will this decision result in an action that follows the guidelines set by responsible adults such as my parents or guardians?
- Will this decision result in an action that will demonstrate that I have good character?

Decide which action is responsible and most appropriate. After applying the six criteria, decide which decision meets the six criteria.

Act in a responsible way and evaluate the results. Follow through this decision with confidence.

Resistance skills

These are skills that are used when a person wants to say **NO** to an action or to leave a dangerous situation. Meeks and Heit (2004) list down the following important skills in dealing with drug offers or situations that can lead to drug use:

Use assertive behavior. Assertive behavior is the honest expression of thoughts and feelings without experiencing anxiety or threatening others. When you say assertive behavior, you show that you are in control of yourself and the situation. You say "NO" clearly and firmly. As you speak, you look directly at the person(s) pressuring you. Aggressive behavior is the use of words and or actions that tend to communicate disrespect. This behavior only antagonizes others. Passive behavior is the holding back of ideas, opinions and feel-

ings. Holding back may result in harm to you, others, or the environment.

Avoid saying, "NO, thank you." There is never a need to thank a person pressuring you into doing something that may be harmful, unsafe, disrespectful and or illegal or actions that may result in disobeying your parents or displaying lack of character.

Use non-verbal behavior that matches verbal behavior. Non-verbal behavior is the use of body language or actions rather than words to express feelings, ideas, and opinions. Your verbal "NO" should not be confused by misleading actions.

Influence others to choose responsible behavior. When situation poses immediate danger, remove yourself. If no immediate danger present, try to turn to situation into a positive one. Suggest alternatives, responsible ways to behave. Being positive role model helps you feel good about yourself and helps gain respect of others.

Avoid being in situations in which there will be pressure to make harmful decisions. There is no reason to put yourself into situations in which you will be pressured or tempted to make unwise decisions. Think ahead.

Avoid being with persons who choose harmful actions. Your reputation is the impression that others have of you, your decisions and your actions. Associate with persons known for their good qualities and character in order to avoid being misjudged.

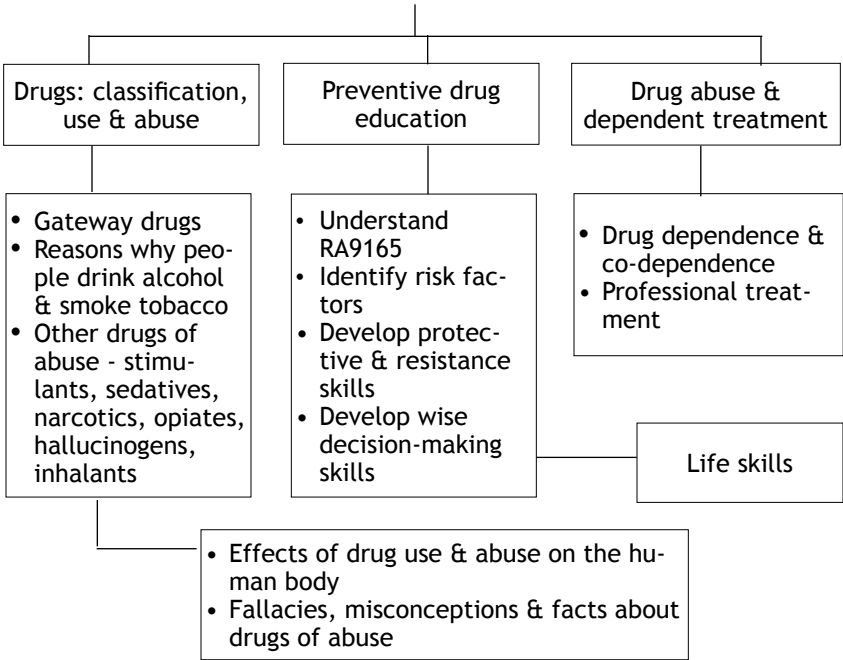
Resist pressure to engage in illegal behavior. You have a responsibility to protect others and to protect the laws of your community. Demonstrate good character.

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FRAMEWORK FOR SUBSTANCE USE AND ABUSE



CHAPTER 7

SAFETY AND FIRST AID

An important aspect of promoting health and well-being is understanding ... (that) injury may compromise our ability to live life to the fullest.

-K. Mullen, R. Gold, P. Belcastro, & R. McDermott

Accidents are the fifth leading cause of mortality in the Philippines, especially among school children. One major reason for this is obvious: children are extremely active—they are constantly exploring and testing their environment. They are often ignorant or unaware of the risks they take. And, they have simply not yet learned to be as cautious as they should be. In most instances accidents are caused by human error or carelessness. Hence, the importance of safety education

Children should already have some knowledge of first aid procedures so that they can help an accident victim in an emergency. The help they can give can mean the difference between life and death in extreme cases. However, children should know the limits of the first aid they can give because improper first aid can actually do more harm than good in some instances.

Safety refers to the minimization of risk while maximizing quality of life. It is the application of knowledge, skills, and attitudes in any situation to minimize risks. To make safe choices in life, one must be able to accurately assess the risks of a given situation and be aware of the range of alternative choices that might decrease risk. It involves being aware of the hazards that exist in the environment, accidents that might occur, and compliance with safety rules in different places, whatever the activity. It also means correcting poor conditions promptly to prevent accidents.

Safety education refers to the kinds of choices we make as individuals that can be affected by knowledge, attitudes, and skills, which can modify the risks associated with injury (e.g. crossing the streets in unsafe places, using violence to settle quarrels).

First aid is the immediate help given to a person who has been injured or suddenly taken ill before more qualified medical help can be obtained. It includes self-help and home care if medical assistance is not available or is delayed. It also includes well-selected words of encouragement, evidence of willingness to help, and promotion of confidence by demonstration of competence.

The elements of safety and first-aid education are:

- Knowledge—which creates an awareness of accident potential, problem areas and knowledge of first aid principles
- Attitudes—which enable a person to judge the potential value of making a behavioral change
- Skill development—which allows the individual to consistently and safely perform an action.

LIFE SKILLS FOR HEALTH

- Communication skills
- Problem-solving skills
- Making wise health decisions
- Evaluating alternatives
- Taking responsibility for one's actions
- Managing the expression of one's feelings
- Coping with abuse and trauma
- Managing time

RIGHTS OF CHILDREN

- The right to safety
- The right to information
- The right to a healthy environ-

ment: presence of barangay tanod in the community, fire department, police department, etc.

[Also refer to Chapter 9 Consumer Health]

INJURIES

Accidental or unintentional and intentional injury and death could happen anywhere and at any time. Most of the accidental or unintentional injuries are motor vehicle accidents, poisoning, drowning, and home fires. Intentional injuries include suicide, homicide, and other forms of violent and abusive behavior.

Accidental injuries. Accidental or unintentional injury involves many complex problems involving many different sectors of society. The National Safety Council defines accident as a “sequence of events, which usually produces unintended injury, death, or property damage.” However, there is now a movement stating that there is no such thing as an “accident.” What we call accidents is really the result of a series of events that could be prevented with appropriate attention to certain factors. One of the leading causes of accidental injuries is caused by motor-vehicle accidents. Alcohol drinking is a major factor in motor vehicle accidents resulting in serious injury and death.

Accidents are primarily social in nature, that is, “most factors that contribute to accidents are caused

by people and thus can be eliminated.” They further suggest that there is a mistaken belief among most people that accidents stem from only one cause; rather, each one is the result of many associated contributing factors. Table 13 lists some contributing factors to accidental injuries.

Intentional injuries are injuries resulting from self-directed violence, such as suicide, and interpersonal violence, such as homicide, sexual abuse, and domestic violence. Violence is the use of physical force with intent to harm oneself or another person. An increasing number of young people today are not only becoming victims of violence but are also witnessing violence at home and in their communities.

Children need to be taught to trust their feelings when they do not feel right about a person or a situation. For example, if a child is being touched inappropriately by an adult and the touch makes him/her feel uncomfortable, the child should be taught to inform another adult. Teach children that they have the right and the responsibility to determine when and how they wish to be touched. Teach them to assert their own privacy. They need to be taught to keep their distance from people who make them feel uncomfortable.

Domestic violence is violence that happens within the family or within other relationships in which people live together—spouse abuse, siblings hurting each other, child abuse, and the like. Child abuse is the harmful treatment of a person under 18 years old and includes physical abuse, emotional abuse, sexual abuse and neglect. Most of the time, a family member is the abuser. Victims of child abuse often become abusive when they themselves become parents.

In school, interpersonal violence takes the form of bullying and fighting.

Table 13. Contributing factors to accidental injuries

Type	Contributing factors
Traffic	Alcohol, speed, vehicle and road conditions, driver error, inadequate safety or warning signs, poor implementation of traffic regulations
Fires	Smoking, cooking, heating defects, electricity defects, lightning, hazardous storage of products, inadequate or absent sprinklers, inadequate or absent smoke detectors, inadequate or absent fire extinguishers
Poisoning	Curiosity combined with inability to read, absence of child-proof caps, absence of warning (cross and bones) stickers, mixing medications
Occupational hazards	Uneven surfaces, unguarded machinery, barriers in doors or exits, exposure to toxic chemicals

Bullying is an attempt by a person to hurt or frighten another person who is thought to be smaller or weaker. Bullying often leads to fighting.

Homicide is the accidental or intentional killing of another person. The schools should strictly implement rules about carrying deadly weapons and about drinking and drug abuse as these are risk factors in committing homicide. The culture of violence should be decreased by discouraging corporal punishment at home and school. Children should not be exposed to violence and violent role models in television shows, movies and other media. In contrast, there should be an increase in the presentation of positive, nonviolent role models.

Self-protection strategies are strategies that can help protect oneself and decrease the risk of becoming a victim of violence. Young people should learn to protect themselves. They should learn how to trust their feelings about people and situations. If they feel that a particular relationship is not healthful, they should break off the relationship. They should pay close attention to people near them and be aware of what they are doing to avoid harmful situations. Most important, they should avoid putting themselves in risk situations, for example, walking alone in dark places or going with strangers.

Suicide is the intentional taking of one's own life. Many of those who attempt suicide do not receive medical care and emotional and mental counseling, such that they are at risk of attempting to commit suicide again. This happens because families try to hide suicide attempts within the family. Parasuicide is a suicide attempt in which a person does not intend to die. It is a cry for help and the person wants others to know what s/he is feeling. Parasuicide should be taken seriously because it can also lead to death. Some young people who are thinking of committing suicide usually give indications through their speech and behaviors. Expressions of suicide intent, talk of death, or threats about suicide are some indicators. Some young people might write farewell letters or give away valuable things to their friends and siblings. Some exhibit changes in behavior, moods and feelings. If someone has undergone noticeable behavior changes or has experienced major life crises, teachers and parents should be alert to warning signals. Teachers should be sensitive to students' behaviors and should see to it that these students are not left alone but listened to. The school guidance and counseling program should have procedures for dealing with students with deep problems.

RESPONSIBILITIES OF CHILDREN

We live in a very dangerous world. While some threats are not within the students' personal control, there are many options available to students to decrease their risk of disability and death from intentional and unintentional

tional injuries. By taking responsibility for one's safety and the safety of people in the immediate environment, students are taking an important step toward wellness.

Foremost among the responsibilities of students are to avoid trouble and to report signs of trouble.

Attitudes toward the differently-abled

When a child is physically well, he is able to do things almost without limitations. There is that sense of completeness and wholeness. Wholeness also refers to psychological well-being, emotions, feelings, and the different dimensions of being a person.

Language plays a major role in shaping ideas. Consider the use of the word *disability*. What is associated with it? Do the following words come to mind—invalid, casualty, suffering, martyr? Is the victim concept promoted when these terms are used? Is the disabled viewed as a totally dependent, hopeless person? In reality, disability simply means the inability to do an action; for example, a person with only one leg cannot walk without assistance. Consider also the transformation of words that refer to the differently-abled. In the old days, people used *handicapped*. This eventually changed to *disabled person*, which was again modified to *person with disability*. There doesn't seem to be a difference with the two terms but there is. *Disabled person* uses disabled as an adjective, which connotes that this person is nothing else except disabled. On the other hand, *person with disability* connotes that this person has something, much like a person with a fever or a person with a gift for playing chess. In recent years, the term *differently-abled* was introduced and is now being used. This recognizes that a person with no sight would have abilities that a sighted person would not have. This person's other four senses would be heightened. We thus use a term that highlights the abilities rather than the lack thereof.

Culture also affects people's beliefs. Others view disabilities as punishments or the doings of witchcraft. Many view persons with disabilities with pity and sympathy. This attitude promotes more dependency rather than reliance in their inner strength. Preserving the individual's personhood are attitudes to assume, if we are to help them.

Physical changes in body structure, such as kyphosis (kuba), loss of limb, and effects of polio on the legs are often associated with physical disability. There are, however, other forms of disabilities. Other forms of obvious physical

Helping attitudes for the differently-abled

- Empathy: understanding the meanings and feelings of others
- Listening: promoting trust, respect and comfort
- Presence: sitting and spending time with a friend
- Allowing them to harness their inner strength

disabilities include loss of arms or legs. Hearing loss, loss of sight and loss of voice / sound are also disabilities. Persons with long term or chronic illnesses also suffer from disability. Their basic body functions are usually affected by the illness.

The following assistive devices help the differently-abled perform independently:

- Wheelchair for mobility
- Walking canes (also used for the blind)
- Crutches
- Corrective eye glasses for vision impairment
- Hearing aids for hearing loss
- Body brace for back support

Help for the differently-abled is available particularly in community agencies that work toward helping them. What is needed is good medical evaluation and screening so that appropriate rehabilitation activities can be prescribed.

The disability of one family member can have a significant impact on the family structure. Thus the family members need support too. This can be done by maintaining good communication with them and ensuring a good partnership between the school and the parents. The family needs to be informed how a child with disability performs in school. Allowing them to express their feelings and anxiety helps. Family counseling by appropriate support groups facilitates acceptance of the disability.

Body image

Body image is the mental idea a person has of her body at any moment. This mental picture of one's body develops over time. Body image makes up one aspect of the individual's self-concept. Body image is an inner experience, which includes attitudes and feelings.

Body image disturbance arises from observations that persons with changes in structure and function, or appearance, may fail to perceive the changes. Another possibility is that the person may not be able to accept and adapt to these changes.

A change in body structure caused by a physical disability is often accompanied by problems related to self-concept or body image. Young people with this problem may tend to shy away from their peers. They may get disturbed when they perceive a threat to their life activities. They often manifest feelings of rejection and inferiority. How a young person deals with the problem depends on the type of help available.

Ways to help the differently-abled

Teachers can help differently-abled students improve their self-esteem by allowing them to ventilate their feelings. This promotes a sense of trust, respect, security and comfort. Listening is an art and should be done with an intent to understand what is being verbalized by the other person. The differently-abled person needs empathy or understanding, which involves communicating that understanding to the other person.

Helping differently-abled children with assignments and activities is an example of positive support. The idea is not to do things for them but to support them to their level of performance. With an adequate support system, differently-abled persons can harness their inner feelings and strengths. This kind of inner motivation will promote a sense of acceptance and well-being.

It is also important to stress to each student that s/he is unique and that everybody should strive to co-exist with each other regardless of their differences. Emphasize what s/he can do rather than what s/he cannot do. Search for opportunities for each student to cooperate with others and to display his/her talents to the class. These will help both special students adjust to the regular classroom and encourage other students to accept them.

PRACTICING SAFETY

Safety at home

1. To prevent falls—
 - ❑ Don't leave toys or other objects on stairs or sidewalks
 - ❑ Keep stairways and walkways well-lighted.
 - ❑ Keep the kitchen floor free of wet spots.
 - ❑ Caution children from climbing trees or concrete walls.
 - ❑ Install handrails along stairways.
 - ❑ Place window guards in upper story windows accessible to children.
 - ❑ Place rubber mats in the bathrooms.
2. To prevent fires— [*also refer to page 140*]
 - ❑ Don't play with matches or the kitchen stove.
 - ❑ Turn off the LPG tank after cooking.
3. Know the telephone number of the local Poison Control Center.
4. To prevent poisoning—
 - ❑ Keep medicines out of children's reach.
 - ❑ Store cleaning supplies, insecticides, mothballs, and aerosol cans in a locked place. Never store them under the sink.
 - ❑ Be sure hazardous materials intended for outdoor use—paint, gasoline, lighter fluid—are secure.
 - ❑ Don't leave a child alone with a toxic product even for a minute;

- take it with you to answer the phone or doorbell.
 - ☐ Check expiration date of medicines and food and get rid of those that are outdated.
 - ☐ Be sensitive to spoiled food. Throw them away.
5. Never leave babies, toddlers and young children at home alone. Teach older children what to do when they are home alone—
- ☐ Answer the phone safely—never tell anybody that they are home alone.
 - ☐ Have a trusted neighbor they can call or go to if they become scared or upset.
 - ☐ Always lock the doors of the house when they are home alone.
 - ☐ Know their parents' phone number at work or cell phone and call them when they arrive home from school.

Safety in the streets

1. Walk on the sidewalk. If there is no sidewalk, walk on the left side of the road or street. At night, wear white or light-colored clothes.
2. Cross streets only at the corners. If there is a traffic signal, cross with the green light.
3. When waiting to cross a street or catch a bus, stand on the sidewalk, not in the street.
4. When riding a bicycle:
 - ☐ Signal (using hand signals) your intention to change directions.
 - ☐ Go in a straight line, and don't weave in traffic.
 - ☐ Slow down on rainy days.
 - ☐ The bicycle should have reflectors at the rear and the sides, as well as the frame or wheels. Reflecting tape should be attached to clothes at night. In the daytime, wear bright clothes.
 - ☐ Be especially alert to hazards on the road. Check for cars before making a turn. Watch for sewer grates, pot holes, gravel and low-hanging branches.
 - ☐ Avoid clothing that might get caught in the chain or spokes (long scarves and baggy trousers or dresses).
 - ☐ Wear a helmet.
 - ☐ Use bicycle lanes when available.
5. Be aware of surroundings. Walk in the middle of the sidewalk. As much as possible, walk with someone else, especially at night.
6. Stay away from dark places. It is alright to scream if approached by someone intending harm.

Safety in relation to transportation

Going to school is an everyday experience for the school-aged child. Walking to school can be enjoyable in a safe environment. In urban areas where there is vehicular traffic, knowledge of traffic rules, such as walking facing the traffic, using the sidewalks, recognizing traffic lights and signs and cross-

ing on pedestrian lanes are important.

In rural areas, children walk to school or take tricycles or jeepneys. It is a common sight in some barangays to see people, even young children, hanging on to the side of jeepneys or at the back of tricycles and motorcycles. These are realities in some rural communities. In situations like these, safety education on how to protect oneself needs to be taught. The principal element of self responsibility has to be explained.

While riding a car or van, the use of seat belts and child safety restraints are very important. A seat belt lessens the impact of injury during collisions. It keeps the occupant from being thrown against the motor vehicle's interior components such as the windshield, steering wheel or dashboard. When a seat belt is worn, a motor vehicle occupant is also more likely to be alert. Many new cars are equipped with air bags. These cushions inflate automatically to protect the occupants of the car in the front seat from hitting the car's interior. For children weighing less than 30 kg. (approximately 8 years old and below), the use of appropriate car seats is highly recommended. Numerous studies conclude that car seats save lives. In fact, many countries around the world mandate the use of these devices. As well, the safest place in a vehicle for children is in the rear seat.

Bicycle riding is also common among children. It is a good form of exercise for fitness. But children should observe safety precautions. Safety rules, when observed, reduce the risk of accidents. Helmets, knee and elbow pads must be used when cycling, skateboarding or roller skating/ roller blading.

Safety in swimming

1. Learn to swim.
2. Stay in shallow water unless you can swim well.
3. Never swim alone. Swim with a buddy. Watch out for each other.
4. Never play and tease each other when swimming.
5. Dive or jump into the water only when you know the water well—when the bottom is clear of rocks and it is deep enough for diving.
6. Avoid swimming in the pool where others are diving or jumping into the water.
7. Never swim right after eating.

Safety with living and non-living things

1. Keep away from stray dogs and other animals that might bite.
2. Don't tease animals.
3. Have pet dogs vaccinated against rabies.
4. Keep away from strange plants and fruits.
5. Keep knives, scissors, and other bladed instruments out of reach of children.

Safety in different conditions and occasions

Typhoons. Keep tuned to your radio or television set for the latest Weather Bureau information. Be sure to get the facts and not rumors. Avoid being marooned. Stay away from low-lying beaches or other places in danger of being swept by high tides or storm waves. Be ready to evacuate the area if told to do so.

Stay at home and be alert for flashfloods. Secure movable objects, which may be blown away or torn loose. Put objects of high value up as high as you can in case of flooding.

Store food and water for emergencies. Increase your regular food and water supply so that there will always be a two-week supply of food and water for your family in your home. Store food in a special place. It should consist of kinds of food that will keep for months without refrigeration, require little or no cooking, and yet will provide a reasonably well-balanced diet.

Know the warning signals and their meanings. Have a flashlight in good working condition. Be especially careful of fires. Have a bucket of sand or fire extinguisher available to put out oil fires.

If the “eye” of a storm passes directly over your area, the skies may be clear and there may be a lull in the wind lasting from a few minutes to a half hour or even longer. Remain in a safe place. Be especially cautious, since the wind will return from the opposite direction suddenly and may cause even greater violence.

After the typhoon has passed, stay away from broken power lines and notify the police or utility company for any broken lines that you may see.

Stay calm, alert and helpful. Do not panic, but use good common sense in order to save your life and possessions.

New Year. We usually meet the New Year with fireworks, the main cause of burns during the occasion. There have been many cases of *watusi* poisoning among children. *Watusi* is a “dancing” firecracker made from toxic chemicals. Signs and symptoms of *watusi* poisoning include burns, burning pain in the throat and garlic odor in the breath. Nausea, vomiting and abdominal pain occur and in extreme cases, the casualty can go into shock. The Department of Health warns against inducing vomiting in case of *watusi* poisoning. Instead, give six to eight egg whites to children and eight to 12 egg whites to adults. If there is skin burn, bathe the casualty using alkaline soap. Then take the casualty to the nearest hospital.

Children should not be allowed to play with firecrackers, not even with sparklers. It would, in fact, be best for families not to use fire crackers at all. There are many safe ways of welcoming the New Year. Children should be taught these safe practices instead. Families who have access to weapons, guns, or other firearms should never use them during the New Year.

Earthquakes. The key to effective disaster prevention is preparedness planning. This means that building structures, both home and office, have to be inspected and evaluated for their soundness. Familiarize yourself with your place of work especially if it is in a high-rise building. Master exit routes. Prepare your home to prevent injuries during an earthquake. Strap heavy furniture to restrict sliding or toppling, especially if the furniture, like a cabinet, is en route to the exit. Check the stability of hanging objects which may fall during earthquakes.

During an earthquake, it is best to keep calm to ensure that you and your companions exit a building safely. Protect your body from falling debris by bracing yourself in a doorway or by getting under a sturdy desk or table. Of course, identifying these “safe zones” in advance would help a great deal. In crowded places like stores, theaters and churches, do not rush to the exit. Instead, seek shelter in a “safe zone” and only exit the area when the quake has stopped or paused. Keep calm and try to calm the crowd as well. Direct them away from materials that might fall. If caught outdoors, get away from power lines, posts, trees, walls and the like. Head to the nearest open space available, but stay clear from steep slopes or cliffs which may be affected by landslides. When driving a vehicle, pull to the side of the road and stop. Do not attempt to cross bridges or overpasses which might have been damaged.



After the earthquake, check yourself and others for injuries. Check for and control fires that may have erupted. Check your water, electrical and gas lines for possible damage. Continue to listen to the radio for updates on the quake. It is best to use battery-operated radios in case your electrical lines have been affected by the quake. Obey public safety precautions. If you must evacuate, leave a message on where you are headed. Take with you necessary items for protection and comfort.

Volcanic eruptions, ash fall. Volcanic eruption clouds are liable to disperse ash over a large area (over 1000 km) and affect the local infrastructure in various ways such as:

- Divert, delay and restrict aircraft accessibility

- Affect food supplies, crops and livestock
- Cause poor visibility and dangerous driving conditions
- Block vehicle air filtration systems causing over heating and mechanical failure
- Block drainage systems and cause local flooding
- Affect railway lines
- Affect water supply
- Cause electrical short circuits in transmission lines, computers, and in micro-electronic devices.

Health problems result from ash particles within the atmosphere, such as increased risk of asthma reaction, general respiratory and breathing problems, potential for severe reaction with moisture within lungs causing a cementing affect within the lungs, and local eye irritation.

It is important to monitor weather conditions particularly wind direction (wind changes direction with altitude). Evacuation plans are important as well. Head upwind to a safe area under cover. Also have clear medical evacuation plans, which might be affected by aircraft and vehicle accessibility. Wear protective face masks and goggles. Make regular updates with the volcanic monitoring center. Have sufficient water, food and medical equipment supplies, when travelling and at base location (supplies should be good for a minimum of 72 hours). Once major eruption has been declared, have plans in place to return to a safe location and at a suitable distance.

Whether in a car, at home, at work or play, you should always be prepared. Intermittent ash fall and resuspension of ash on the ground may continue for years.

Keep these items in your home in case of any emergency due to natural hazards:

- Extra dust masks
- Enough non-perishable food for at least three days
- Enough drinking water for at least three days (one gallon per person per day)
- Plastic wrap (to keep ash out of electronics)
- First aid kit and regular medications
- Battery-operated radio with extra batteries
- Lanterns or flashlights with extra batteries
- Extra wood, if you have a fireplace or wood stove
- Extra blankets and warm clothing
- Cleaning supplies (broom, vacuum, shovels, etc.)
- Small amount of extra cash (ATMs may not be working)

If there are children, explain to them what a volcano is and what they

should expect and do if ash falls. Prepare yourself with the following:

- Know your school's emergency plan.
- Have quiet games and activities available.
- Store extra food and drinking water.
- Keep extra medicine on hand.

Animals should be kept under cover, if possible.

What to do with the car

Any vehicle can be considered a movable, second home. Always carry a few items in your vehicle in case of delays, emergencies or mechanical failures.

- Dust masks and eye protection
- Blankets and extra clothing
- Emergency food and drinking water
- General emergency supplies: first aid kit, flashlight, fire extinguisher, tool kit, flares, matches, survival manual, etc.
- Waterproof tarp, heavy towrope
- Extra air and oil filters, extra oil, windshield wiper blades and windshield washer fluid
- Cell phone with extra battery

What to do in case of an ash fall

Know in advance what to expect and how to deal with it; that will make it manageable. In ashy areas, use dust masks and eye protection. If you don't have a dust mask, use a wet handkerchief. As much as possible, keep ash out of buildings, machinery, air and water supplies, downspouts, storm drains, etc. Stay indoors to minimize exposure, especially if you have respiratory ailments. Minimize travel; driving in ash is hazardous to you and your car. Do not tie up the phone line with non-emergency calls. Use your radio for information on the ash fall.

What to do during and after an ash fall

Secure your home. Close doors, windows and dampers. Place damp towels at door thresholds and other draft sources. Tape drafty windows. Dampen ash in yard and streets to reduce re-suspension. Put stoppers in the tops of your drainpipes (at the gutters). Protect dust sensitive electronics. Since most roofs cannot support more than four inches of wet ash, keep roofs free of thick accumulation. Once ash fall stops sweep or shovel ash from roofs and gutters. Wear your dust mask and be careful on ladders and roofs. Remove outdoor clothing before entering a building. Brush, shake and pre-soak ashy clothing before washing.

If there is ash in your water, let it settle and then use the clear water. In rare cases where there is a lot of ash in the water supply, do not use your dishwasher or washing machine.

You may eat vegetables from the garden, but wash them first. Dust often using vacuum attachments rather than dust cloths, which may become abrasive. Use battery operated radio to receive information. Follow the school's directions for care of children at school. Keep children indoors; discourage active play in dusty settings. Dust masks do not fit well on small children. Keep pets indoors. If pets go out, brush or vacuum them before letting them indoors.

Make sure livestock have clean food and water. If possible, do not drive; ash is harmful to vehicles. If you must drive, drive slowly, use headlights, and use ample windshield washer fluid. If car stalls or brakes fail, push the car to the side of the road to avoid collisions. Stay with your car.

What to do during the cleanup period

Minimize driving and other activities that resuspend ash. Remove as much ash as you can from frequently used areas. Clean from the top down. Wear a dust mask. Prior to sweeping, dampen ash to ease removal. Be careful not to wash ash into drainpipes, sewers, storm drains, etc. Use water sparingly. Widespread use of water for cleaning up may deplete public water supply. Maintain protection for dust-sensitive items (e.g. computers, machinery) until the environment is ash-free. Seek advice from public officials regarding disposal of volcanic ash in your community. Wet ash can be slippery. Use caution when climbing on ladders and roofs. Establish childcare to assist parents involved in cleanup.

Tsunami. Beware of tidal conditions around your coastal area. Familiarize yourself with the warning systems in place for tsunami. Unusual lowering of the sea level is a warning of an approaching tsunami. Immediately move towards high ground. If you are on a boat, immediately steer toward deep waters.

When an earthquake occurs in your area, immediately move to areas of higher elevations away from the shore. A tsunami is not a single wave but a series of waves. When a tsunami strikes, stay out of danger until the last waves have passed. Be aware of tsunami warnings. They are given to protect you from tsunamis that may be generated either by a distant earthquake or by a local event. Never go to the shore to watch a tsunami. You may be too close to get away and survive the destructive effects. A tsunami may be relatively small in one area but can be very large and destructive in another site only several kilometers.

Flood is the overflowing of water beyond the normal confines of a stream or other body of water or accumulation of water by drainage over areas which are not normally submerged.

The Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) suggests the following safety measures during floods:

1. Always listen to the official warnings issued by PAGASA through reliable media, such as radio, televisions, and newspaper reports.
2. People living near banks of rivers in danger of sudden rise in water levels during typhoons, should be prepared to evacuate to high ground when typhoon warnings are issued. It is not advisable to sleep or spend the night in such places when there are indications of fast rising water levels in the river coupled with continuing strong rains.
3. Evacuation plans should be made in advance. Give each member of the family specific instructions and responsibilities in case of evacuation.
4. People living in areas affected by swift currents should evacuate to high areas when the depth of the flood is still below one foot.
5. When a typhoon warning is announced, secure weak houses against being carried away by swift currents.
6. Do not swim or go boating in swollen rivers.
7. Drink only boiled water during and immediately after a flood.
8. Eat only well-cooked food during a flood. Protect left-overs against contamination.
9. Avoid unnecessary exposure to the elements.
10. Be immunized against cholera, dysentery and typhoid as required by health authorities.

To lessen flooding and its effects, we need to stop cutting trees. Plant trees instead. Report illegal loggers and kaingineros. Report illegal construction of fishponds and other establishments in waterways. Do not throw garbage in esteros or rivers. Do not throw anything, like cigarette butts, wrappers, especially those made of plastic or non-biodegradable materials, in public areas. These small pieces of trash eventually find their way to the drainage or sewage system, and ultimately our waterways. A build up of trash clogs the drainage systems, thereby impeding the flow of water. Help clean the neighborhood. Support community activities intended to lessen effects of floods.

Fire. Make your home safe. Install a smoke alarm in your house. Have fire extinguishers in your house and learn how to use them (Figure 13). Dispose

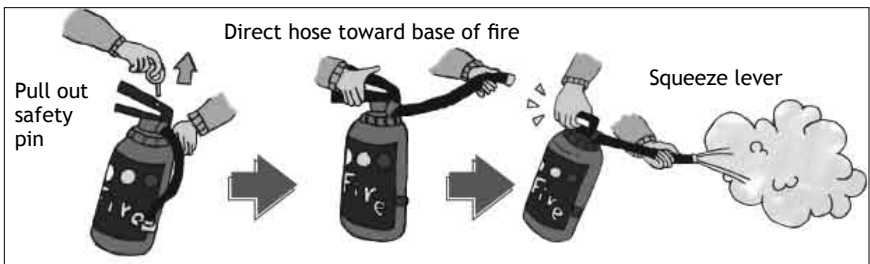


Figure 13. Putting out fires

of things that easily catch fire—newspapers, paper, etc. Do not put flammable materials near flames; remove all curtains from your kitchen as these are fire hazards. When there is a blackout, make sure that your candles are nowhere near paper, cloth or any material that can act as kindling. Know the telephone number of the nearest fire department. Keep the number on the first pages of your telephone book. Practice calling the Fire Department to report a fire, giving your name, your address, and how to get there.

Be prepared for fire

1. Plan at least two escape routes for your family in case of fire.
2. Plan escape routes from every room in the house, especially the bedrooms.
3. Get everyone out of the house.
4. Select a place outside your house where everyone would meet after escaping. It should be a place that children can reach easily and yet be safe from danger.
5. Practice your escape plan once a year.
6. Once you are out, don't go back to the house.

Escaping from fire

1. Use the escape route you have designated.
2. If there's smoke on your way, crawl low under the smoke to your exit.
3. If you reach a door, feel the door first before opening it. If it is warm, don't open the door, use another exit.
4. If your exit is blocked by flames,

stay in the room with the door closed.

5. Wet and roll blankets and cover every opening with them.
6. Signal for help using a bright-colored cloth at the window.

If your clothes are on fire

1. Do not run as the air will fan the fire.
2. Cover yourself with a blanket and roll on the ground. Even if there's no blanket, keep rolling on the ground.
3. Cover your face with your arms as you roll on the ground.

If it is a grease fire (oil-based fire)

1. Do not use water to put out the fire. Spraying water on grease fires would simply splash the oil and widen the fire area.
2. If the fire is still contained on the stove top, simply get a large casserole cover and put it over the fire.
3. If the fire has spread on a counter top or the floor, wet some rags and put them over the flames.

FIRST AID

Assessing a dangerous situation

During times of emergency, think first before acting.

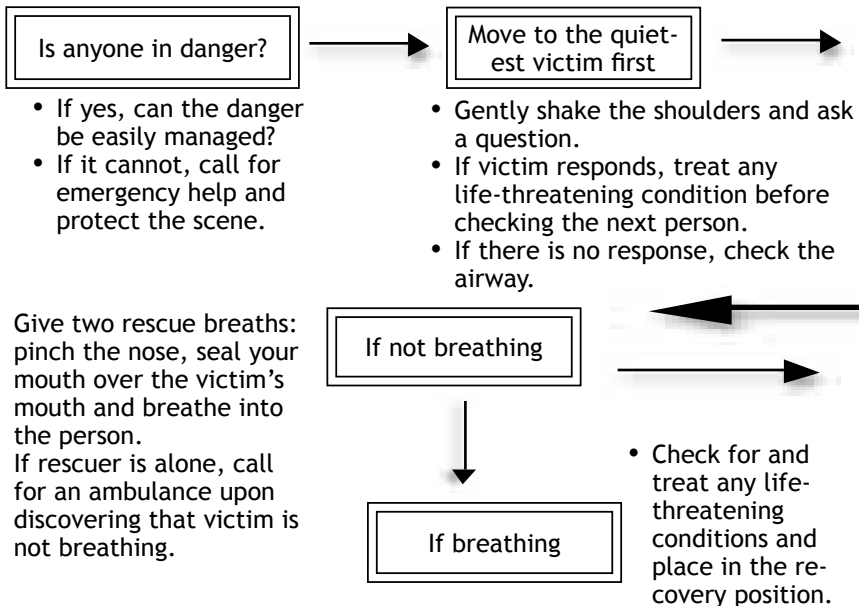
1. Take control of yourself. Take a few deep breaths if you feel nervous.
2. Think before you act. Don't do anything that places your own life in danger.

3. Call for help if you are alone and someone may hear you.
4. Deal with any continuing danger before giving first aid, e.g. if you are in the middle of the road and there are many vehicles passing by.
5. Determine the number of injured and the seriousness of their injuries.
6. Is the person conscious? Ask a loud, clear question, like “Can you hear me?” Gently shake the person’s shoulders. If there is no response at all, the casualty is unconscious. If the eyelids flicker or the person groans or makes a sound, s/he is probably semiconscious.
7. Has breathing stopped? Watch the chest to see if it rises and falls and listen for sounds of breathing. Clear the airway and feel with your cheek for air movement from the mouth.
8. Is there a pulse? If there is, it means that the heart is beating. Take the pulse at the carotid artery in the neck.

Do’s and Don’ts in Giving First Aid

- DO stay calm.
- DO reassure and comfort the casualty.
- DO check for a medical bracelet indicating a condition, such as epilepsy or diabetes.
- DO loosen any tight clothing.

Action in an emergency



- DO keep the casualty covered to reduce shock.
- DON'T give food or drink to an unconscious person
- DON'T move an injured person unless you need to place him/her in the recovery position

Injuries to the bones and muscles

Broken bones. There are two main types of broken bone: closed (simple) fracture, where the bone has broken but has not pierced the skin and open (compound) fracture, where the bone has either pierced the skin or is associated with an open wound. The greatest danger with an open fracture is infection. In young children the bones are not yet fully formed and may bend rather than break. Take the victim to the hospital as soon as possible.

Dislocations. The body parts commonly dislocated are the shoulders, thumbs, and hips. Dislocations are very painful and there is obvious deformity. The victim may feel tingling or numbness below the part injured, caused by trapped nerves or blood vessels. Do not try to replace the bone. Make the victim comfortable and take him to the hospital.

Sprains. Sprains are almost always the result of twisting injuries. Dislocation

of a joint occurs as a result of excessive stress being applied to the joint, or

Open the airway

- Lift the chin, remove any obstructions present, then gently tilt back the head.

Check for breathing

- Place your cheek close to victim's mouth and listen and feel for breathing. Look to see if chest is moving.

Look for signs of circulation

- If victim is a child, or an adult who has suffered from a drowning or accident, proceed directly to CPR.
- Otherwise, look for signs of life such as movement and normal skin color for a few seconds.

Continue rescue breathing

- Check for signs of circulation every minute.

Start CPR
(cardiopulmonary resuscitation)

- Combine rescue breathing with chest compressions.

forcing it into an abnormal direction. Many of these injuries occur from running or contact sports.

Strains. A muscle strain or a pulled muscle occurs when muscles are over-stretched or over-pulled too far or too quickly like when playing tennis, basketball or running. Allow the affected muscle or tendon to rest. Pain medication is usually prescribed.

Cramps. This is a strong uncontrolled contraction of the muscle, which may result from poor blood circulation, strenuous exercise, or mineral imbalance in the body. Massage the affected area and exercise gently.

Bruise. A bruise is a sign of internal bleeding. It is usually caused by direct impact. It is sometimes painful but generally heals swiftly with little first aid needed. A bruise goes through several changes in appearance as it heals and may not appear for some time, even days, after the accident. At first, the bruised part may be red from the impact; over time this may become blue as blood seeps into the injured tissue; as it heals, it becomes brown and then fades to yellow.

Severe bruising can also be the sign of serious internal bleeding. If bruising covers a wide area and is accompanied by other complaints and findings, assume that internal bleeding is present. Treat the injured person for shock and seek medical help.

First aid for fractures

- Immobilize the fractured bone by splinting. Do not move the affected area. A person with first aid training can be confident in doing these procedures.
- A pain reliever may be given by a doctor.
- Handle patient with extreme care to prevent further injury and complications.
- Follow proper procedures in lifting and transferring the injured.
- Prevent the crowd from building up around the injured. Allow for breathing space and mobility for the rescuers.
- Do not attempt to lift the injured immediately.
- If the injured is conscious, ask him/her where the pain is localized.
- Maintain the injured in an immobilized position during assessment of injuries to prevent more damage.
- Reassure the injured that measures are being done to help him or her. Make sure that somebody stays with the injured while someone calls to help.
- Maintain good body alignment or bone alignment.
- Bring the injured to the nearest health unit or hospital.

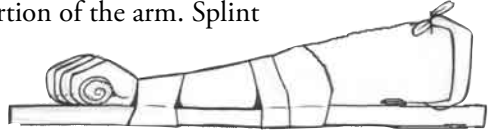
Fractured fingers

- Follow emergency measures for fractures; use small splint like a tongue depressor or large hairpin. The unaffected finger can also be used as splint.
- Make sure that the tip of the finger is not covered so that changes in color can be seen immediately.
- Bluish discoloration of the nails or fingertips indicates lack of oxygen to that area. Loosen splint.



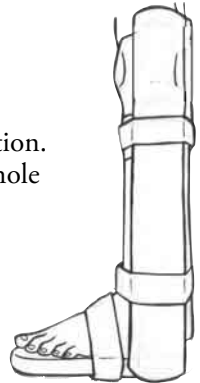
Fractured arm bone or elbow

- Apply splint to the outer portion of the arm. Splint should extend beyond the fracture.
- Wrap a piece of cloth around the arm and the body to immobilize the arm and elbow area.
- Take the injured to the nearest hospital.



Fracture of the hipbone or thigh

- Injured patient should remain in a supine or lying position.
- For hipbone: apply splint from the armpit down the whole body length.
- For thigh: apply splint from the hipbone to the foot.
- Secure splint to the body to immobilize injured area.
- The injured may be in shock; take to the nearest hospital.



Fracture of the leg

- Splint both sides of the leg. The other leg may also be used as a splint.

Moving the injured

1. Secure a make-shift stretcher, such as a piece of wood that is adequate for the body size.
2. Make sure that the neck area is not moved. It should be straight and supported by rolled towels or any substitute on both sides.
3. When lifting, at least five well-instructed people may be needed to maintain the head, neck area, spine and legs in straight alignment.
4. Secure the head and body to the stretcher when transporting the patient to the nearest hospital.

Insect and animal bites

Stings and bites. A sting is felt as a sudden sharp pain and there is a raised white patch on the reddened skin. A bite usually causes mild discomfort and

skin inflammation.

For ordinary bites and stings, do the following:

- If the sting is sticking out, remove it by flicking with the edge of a piece of plastic, such as a cell phone card, or with tweezers. Take care not to squeeze the poison sac at the end of the sting.
- Wash the affected area to prevent infection.
- Apply cold compress to reduce pain and swelling.
- Remove rings, watches, or anything likely to cause obstruction if the area swells.
- Advise the victim to see a doctor if pain persists or if there are any signs of infection.

Mosquito bites. When mosquitoes bite, they inject a small amount of anesthetic and a chemical that stops blood from clotting and then they suck the blood of the victim until they are full. Apply cold compress to relieve discomfort.

Jellyfish. A few species of jellyfish are poisonous—those with long tentacles that sway freely beneath their bodies and have stingers that inject chemicals into the victim. They are very painful and might cause shock in some people.

Calm the victim and then apply alcohol or vinegar to the affected area for three minutes or until the pain subsides. If the victim suffers a severe allergic reaction, take him/her to the doctor/ hospital right away.

Animal bites. There is danger from infection with any animal bite, including human bite, which is among the most infectious. Take the victim to the doctor as soon as possible to see if there is danger of tetanus or rabies infection, or if antibiotics are needed. Keep the wound clean and control any bleeding.

Bee Stings. When a person is stung by a bee, the sting is left in the skin together with a poison bag. The poison is not dangerous, but it can cause an allergic reaction. Bee sting is painful and there is swelling, inflammation and itchiness.

Remove the sting with your fingernails, taking care not to burst the poison. Apply ice to the area to reduce inflammation or immerse the affected area in a bowl of cold water containing ice cubes and a teaspoon of baking soda. This will slow down circulation and help prevent the poison from spreading. Call a doctor if the person develops allergic reaction to the sting or if infection sets in.

Scorpion Sting. The danger with scorpion stings is the development of an allergic reaction. First aid is the same as bee sting—apply ice.

Caterpillar “Stings.” Use adhesive tape or transparent tape to pull out some of the broken spines in the sting area. Washing the area thoroughly with soap and water may help remove some of the irritation. Application of an ice pack or baking soda may help to reduce pain and prevent swelling. See a physician if there’s severe reaction. Very young and aged persons and those in poor health are more likely to suffer severe reaction symptoms.

Snake Bite. Keep the victim still and calm. Immobilize the part bitten with a splint. Do not wash, cut or suck the bite area. Bandage the bitten part firmly. Do not apply tourniquet. Call an ambulance or take the victim to the hospital immediately.

Rabies. There is no cure for rabies but early vaccination following a bite can help develop immunity. Most rabies cases in humans result from dog bites. Other sources include bites from cats, bats, foxes, raccoons and skunks.

Tetanus. This is also called lockjaw because it may tense up the jaw muscles. Tetanus bacteria are dangerous when carried deep into a wound with jagged edges or a puncture wound. Animal bites may cause tetanus. Tetanus affects the central nervous system and can cause muscle spasms, breathing problems and sometimes death. There is a vaccination for tetanus but immunity is not lifelong and anybody suffering a potentially hazardous injury should see the doctor right away for advice on having a booster injection.

Burns and scalds

Burns, caused by dry heat, and scalds, caused by wet heat, are potential fatal injuries. They can cause life-threatening shock and, if around the face and neck, can restrict breathing. Fluid is lost in burns through blistering, swelling around the injury and directly from the injury. The second risk from burns is infection. The risk of infection increases with the size and depth of the burn, and the victim will probably suffer from shock, too.

First degree burns involve only the outer layer of skin and, although painful, are not life-threatening unless a very large surface area of the body is affected. The burned area is very sore, reddish and a little swollen.

Second degree burns include the top layers of skin and involve blistering. They are characterized by red, raw looking skin, blisters that produce clear fluid, and pain. The risk of shock is high. Second degree burns need medical attention.

Third degree burns involve damage to all the layers of skin, usually including the nerve ending and the other underlying tissues and organs. It is characterized by charred tissue often surrounded by white waxy areas of

dead skin with damaged nerves. Third degree burns need emergency medical attention and often require plastic surgery.

Poisoning

There are several forms of food poisoning. Bacterial food poisoning is often caused by bacteria in food that has been poorly prepared. Salmonella is a common cause and is found in many farm products, such as eggs and chickens. Toxic (potentially lethal) food poisoning such as botulism can be due to poisons caused by bacteria in certain types of food, including honey and fish.

When food poisoning is suspected, ask what food has been eaten in the last 48 hours.

Signs and symptoms of food poisoning include: nausea and vomiting, stomach cramps, diarrhea, fever, aches and pains, and signs of shock.

Symptoms of toxic poisoning are dizziness, slurred speech and difficulty in breathing and swallowing. Another sign is when several people come down with the same symptoms at the same time. Strange-tasting food or food that has been left out in the heat or under cooked or reheated food can cause toxic poisoning.

First aid

- Monitor and maintain the person's airway and breathing.
- Place one hand on the forehead and gently tilt the head back. Open the victim's mouth and remove anything that is blocking the airway.
- Place the fingertips of the other hand under the point of the victim's chin and lift the chin. If there are breathing difficulties, call the doctor.
- Help the person into a comfortable position.
- Call the doctor.
- Give plenty of fluids to drink, especially if the person is vomiting and suffering from diarrhea.
- Support the person if s/he vomits, giving a bowl and towels if needed.

Take poisoning seriously, especially in very young children or the elderly.

Common poisonous plants

Many plants have components that are mildly poisonous if eaten, or that may cause allergies if they are touched.

- Hyacinth (bulb)
- Tomato (leaves and stems)
- Belladonna (fruit)
- Wild yam (raw tuber)
- Euphorbia (milky sap)

- Cashew (sap from bark, leaves, and nutshell; fumes from roasting nuts)
- Mushrooms (many wild mushrooms and toadstools)

If somebody has eaten a poisonous plant, try to identify it and seek medical advice. If the person is having breathing difficulties or appears to be lapsing into unconsciousness, take him/her to the hospital immediately.

Wounds

Most minor wounds can be treated at home without the need for a medical doctor. However, the victim should be taken to the doctor if the wound:

- Has a foreign body embedded in it
- Shows signs of infection
- Has the potential for tetanus and the injured person's immunization is not up-to-date
- Is from a human or animal bite

Stop the bleeding: Minor wounds and cuts usually stop bleeding on their own. If not, apply gentle pressure with a clean cloth or bandage. If the blood spurts or continues after several minutes of pressure, emergency care is necessary.

Clean the wound: First, wash hands. If hands are not clean, bacteria may spread into the wound. Cleanse the wound. Wash with water. Use a mild soap if the wound is very dirty. If dirt or debris remains in the wound, clean a pair of tweezers with alcohol and remove the dirt. If dirt or debris cannot be removed, contact your doctor.

Protect the wound: Wound adhesives or a clean gauze or cloth may be applied loosely over the wound. Clean the wound regularly with bathroom soap and water.

Check the item that caused the wound, especially for punctures. If the item is too dirty, e.g. jagged edge of wood, rusted nail, a tetanus shot may be necessary, especially if the child has not received a booster dose at 4-5 years of age or if the last tetanus shot was more than 10 years ago.

Fainting

Fainting is brief loss of consciousness caused by shock, hunger, reaction to emotional news or long periods of inactivity, for example, soldiers standing for long under the sun.

Open the airway and check for breathing. If the person is breathing and there are no signs of injury, then the best treatment is to lay her/him on her/his back with legs raised. This will enable oxygen to flow to the brain and speed up recovery from a faint. If s/he has not begun to come around after

three minutes, or if breathing becomes difficult, put the victim into the recovery position and call for help.

Internal bleeding

Severe internal bleeding is a potentially fatal condition because blood is lost from the circulatory system and the victim might go into shock. Internal bleeding in the skull or around the heart, can cause loss of consciousness and, if untreated, leads to death.

Internal bleeding can be very difficult to identify because it can happen slowly, with signs and symptoms becoming evident days after an accident. It can happen to any part of the body but most especially in areas rich with blood supply—stomach, liver, spleen, and in the bowel.

Treat for shock. Keep the person warm. Place her/him in a comfortable position, preferably lying down with the legs slightly raised. Calm the victim. Treat any external bleeding or bleeding from body openings. Call for medical help immediately and explain what has happened.

Convulsions

Convulsion in babies and young children may be due to high temperature. This may be the result of an infection or because they are over-wrapped and in a warm environment. The signs and symptoms are similar to major epileptic seizure.

First Aid. Make sure that the child is protected from getting hurt. Do not restrain the child. Cool her/him down by removing bedclothes and clothing, where possible. Sponge the head and under the arms with a tepid sponge, re-soaking it regularly. When the convulsion is finished, check ABC* and take appropriate action. In most cases, the child will want to sleep. Dress her/him in dry clothes and let her/him sleep. Bring the child to the health center or to a physician for further assessment.

*ABC—*Airway:* Check that the throat and nose are not blocked. *Breathing:* Check that the patient is breathing. *Circulation:* The signs for circulation are the pulse, coughing, breathing or any movement.

Heart attack

If a coronary artery becomes completely blocked, the area of the heart being supplied by that particular blood vessel will not receive enough oxygen and will eventually die. This blockage may be caused by a clot.

Move the victim into a semi-sitting position, head and shoulders supported and knees bent.

- Reassure the victim and do not let her/him move.

- Call for an ambulance as soon as possible.
- If the victim has medicine, let her/him take it. If aspirin is available, give it to the victim to chew without water.
- Check the breathing and pulse continuously and be prepared to give CPR if necessary.

Applying Cold Compress, Dressing and Bandaging

A dressing is a piece of material that covers a wound to prevent infection or to stop bleeding. Cold compress is used to reduce swelling and relieve pain, especially useful for sprains and strains.

Cold Compress. Ice and cold pack can be used as cold compress.

- Do not apply ice packs directly to the skin.
- Wrap a bag of crushed ice in a clean piece of cloth.
- Apply to the injured part for up to 20 minutes.
- Replace the ice as needed. Frozen items can substitute for crushed ice.

Cold pad

- Soak a folded washcloth or hand towel in cold water. Wring it out so that it does not drip.
- Apply to the injured part for up to 20 minutes
- Keep the pad cool by wetting it.
- If there is bleeding, tie a bandage (soaked in cold water) firmly over the injured part to ensure maximum pressure.
- Check below the site of the bandaging to ensure that blood circulation is not cut off, i.e. if the skin is not white, gray, or blue, or feels cold; if the victim complains of tingling numbness; if the pulse slows or stops; or if the color does not quickly return to the skin when it is gently pinched.

Applying a Dressing. Dressings can be non-adhesive, adhesive or gauze. Non-adhesive is good for burns and scrapes. Large gauze can be used for bleeding wounds and adhesive bandages are used for smaller cuts.

- Wash hands and wear gloves, if possible.
- Unwrap the dressing as close to the wound as possible, taking care not to touch the dressing or the wound. Place it over the wound.
- Wind the bandage around the dressing covering the entire pad.
- Secure the bandage with tape and a bow or square knot.

If a pre-packed dressing is not available, use a piece of clean cloth, such as a clean handkerchief, clean pillow case, or clean plastic bag or wrap. For extra protection, iron the cloth.

Reminders:

- The dressing should be larger than the area to be covered.

- Place non-adhesive dressings shiny side down.
- If blood seeps through the dressing, do not remove it. Place another dressing on top of it.
- For large wounds, use additional layers of padding on top of the dressing.
- Check that the seal on a pre-packed dressing is not broken, to ensure that it is sterile.

Bandaging. Bandages are used to apply pressure to bleeding wounds; covering wounds and burns; and providing support and immobilization for broken bones, sprains, and strains. [Figure 14]

Reminders:

- Explain to the victim what you are doing.
- Work in front of the victim and from the injured side, if possible.
- Bandage firmly over bleeding and securely over broken bone, but not so tight as to cut off blood circulation.
- When wrapping bandages around the body, use its natural hollows, such as the knees, ankles, neck and small of the back to slide the bandage gently into place.
- Since most injuries swell, check regularly to ensure that the bandage is still comfortable and that it remains firmly secured, especially if the victim is moving.
- Secure bandage with tape, clips, or knot—bow or square.
- Ensure that the bandages, especially the knots, do not press into the skin. Put padding between the bandage and the skin, as necessary.

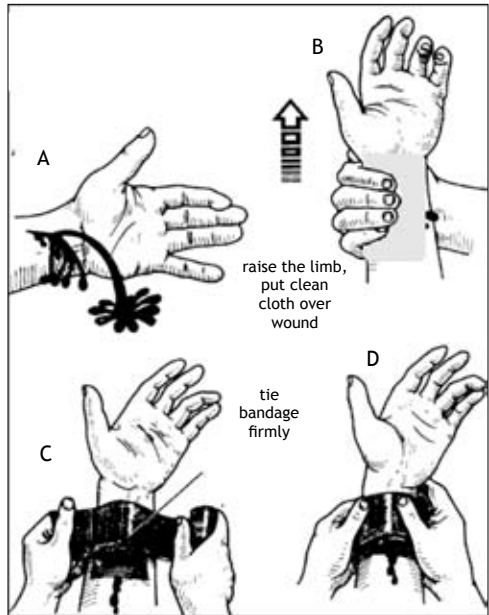


Figure 14. Bandaging

The three main types of bandages are triangular, Ace and tubular.

Triangular bandage. This is made from cloth and can be used as cold compress, padding, support for pressure, or support sling. To use as a cold compress, padding, or to apply pressure with a dressing—

- Use a narrow fold bandage.
- Fold the two ends into the middle.

- Keep folding until you get the appropriate size.
- Store folded in a plastic bag in a dry place.

Ace bandages secure dressings in place. Tubular bandages are used to support joints or hold dressings in place; smaller ones are used for finger injuries.

CARRYING AND TRANSPORTING

Stretcher Improvisation. In certain extreme circumstances it may be necessary to transport a victim to a safe place. In such a situation, you can improvise a stretcher.

Branch and clothing

Select two strong branches that will extend by about one foot at either end of the person to be carried. Ensure that the branch is strong and that there are no sharp parts. Although the branches do not have to be exactly the same size, it will help if they are roughly the same length. It is vital that they are capable of holding the weight of the victim.

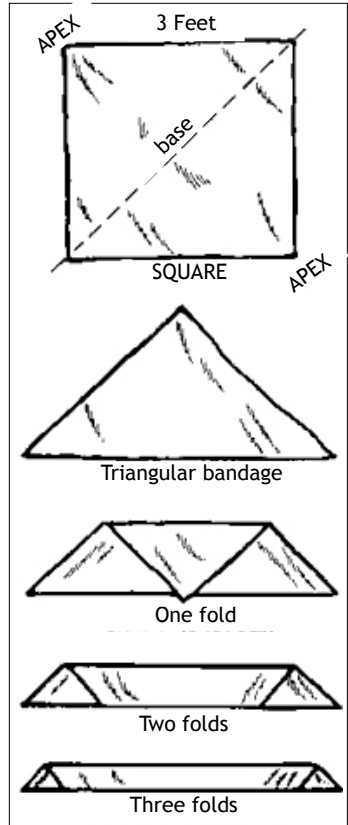


Figure 15. Triangular bandage.

Choose a long strong branch. Now, select some strong clothing—denim and good quality cotton T-shirt. The rescuer should not give away clothing that may put him/her at risk from the weather.

Slide the clothing on to the poles with the poles coming through the arms of the garment. Place the next piece of clothing on to the poles in the same way and overlap the first item. Place enough pieces of clothing on to the poles to ensure that the victim's head and legs will be supported.

Loading and carrying a stretcher

It is generally safer to stay where you are, especially at night or if the weather is bad. You might stumble in the dark or hurt your back. Carry the stretcher only when it is safer to do it rather than stay put. Send or call for help.

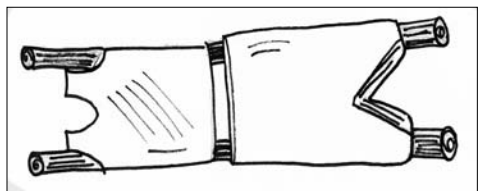


Figure 16. Branch and clothing

Ask the following questions before getting on the task:

- Do you have enough people to lift the victim safely onto the stretcher?
- Is the ground slippery, soft, sloping?
- Does everybody understand what you will do and how you will do it?
- Is there anybody who has injuries or conditions that could become worse if lifted?
- Are there other conditions that may prevent you from safely carrying out the lift?

If in doubt, do not lift the stretcher to eliminate or reduce any risk. Seek shelter while waiting for help to arrive.

Getting a person onto the stretcher. It is possible to lift the victim directly onto the stretcher by two people. Bring the stretcher to the victim and lay it down as close as possible. Decide who will take the top part and who will take the bottom part of the victim.

- Sit the victim up and ask her/him to cross or fold her arms across her chest.
- Squat behind the victim, one person slides his/her arm under the victim's arms, and takes hold of the wrist or lower arms.
- The partner squats beside the victim and pass his/her arms under the victim's thighs, taking hold of the legs.
- The person at the head will lead and determine the timing of the lift. When ready, working together and keeping backs straight, rise slowly and move the victim onto the stretcher.

Survival bag/ flysheet technique. It will be easier to put the stretcher under the victim before adding the poles when using the survival bag/ flysheet technique.

Method 1. Lay the bag/ flysheet next to the victim, gather up about half of the fabric on the side closest to her/him, placing it as close as possible to body. Turn the victim onto her/his side, place the bundle as close as possible to her/his body, and then gently roll the victim back. Pull the remainder of the bag/ sheet out from the sides. You can now add the poles. Turn the victim on to her/his side and roll her/him onto the stretcher.

Method 2. Concertina-fold the top and bottom ends of the bag toward the center with one person on each side of the victim, placing the folded bag/ sheet under the hollow in the small of the victim's back (if you need more room you can gently lift her/his hips). Together, pull the bottom part down toward the victim's feet and then the other half of the bag/ sheet can be pulled up toward her/his head. You can then add the poles. Fold both ends of the bag and unfurl when the victim is placed on top.

Lifting

Consider the following principles when lifting, moving or handling the victim:

- Stand with feet shoulder-width apart, with one foot slightly in front of the other.
- Bend at the hips and knees, not at the back. Keep back straight but not rigid.
- Grip the stretcher securely. Raise head.
- Use the strongest muscles (thighs) to lift, keeping elbows close to your body.

One person should take the lead at all times – usually the person guiding the head. Take regular breaks as needed and move slowly and carefully.

If moving the victim is absolutely necessary, the best approach is for her/him to move by her/himself, thus minimizing risk to both you and the victim. If it is not possible, use following techniques, which do not need real equipment:

The human crutch. If the injured person is having difficulty walking, this technique will provide additional support to a walking stick.

1. Stand on the victim's injured side, pass her/his arm around your neck and grasp her/his hand or wrist.
2. Place your other arm around her/his waist and grasp her /his clothes, preferably the top of the trousers or a belt.
3. Move off with your inside foot first, walking at the victim's pace.

Piggy back. This is an effective way to carry a victim, depending on his/her size and weight. This may reduce ability to carry the rescuer's own equipment, if there are any.

1. Crouch in front of the victim with your back toward her/him and ask her/him to put her/his arms over your shoulders.
2. Grasp the victim's thighs, pull them in toward you and slowly stand up, remembering to keep your back straight.

The drag. This technique is very tiring and should be resorted to only for extreme emergencies in moving people from dangerous areas speedily and over short distances.

1. Crouch behind the victim. Carefully pull him/her toward you. Stop, step back, and pull the victim toward you again.
2. Repeat until you reach your destination.

Two-person carries. It is easier for two people, with practice, to control and move a victim.

Two-handed seat carry

1. Crouch down, facing each other on either side of the victim.
2. Cross over your arms behind the victim and grab hold of her/his waistband or belt.
3. Pass your other hands under the victim's knees and grasp each other wrists.
4. Bring your hands toward the middle of the victim's thighs.
5. Move close to the victim and stand up slowly; you are now ready to move off.



Four-handed seat carry. The two-handed and four-handed seat carries are to be used only with conscious victims because they require the latter to assist the rescuers.

1. Let the victim stand close to you, hold her/his left wrist with your right hand, and tell your carrying partner to do the same.
2. Link hands, taking hold of your partner's right wrist to form a square.
3. Tell the victim to gently sit back onto your hands and tell her/him to place her/his hands around your shoulders.

This is very strenuous and awkward for the rescuers.

FOLK BELIEFS AND PRACTICES RELATED TO SAFETY

The following are folk beliefs that have no scientific basis and should not be followed as they may cause more harm than good.

- Bathing a cat / goat causes lightning to strike the person bathing it
- When there's lightning, do not grin so that it will not hit your teeth. There is only danger from lightning when a person has gold teeth or orthodontic wires.
- Do not cry when someone goes away or s/he will meet an accident
- The first time you travel by boat, drop pins into the water to avoid accidents.
- Eating from a broken plate presages an accident.
- When leaving while others are still eating, turn plate around or you will meet an accident.
- Someone who drowns during a town fiesta is a sacrificial victim.
- A child who eats coconut embryo will die of drowning.

- Eating cat's leftovers protects one from black magic.

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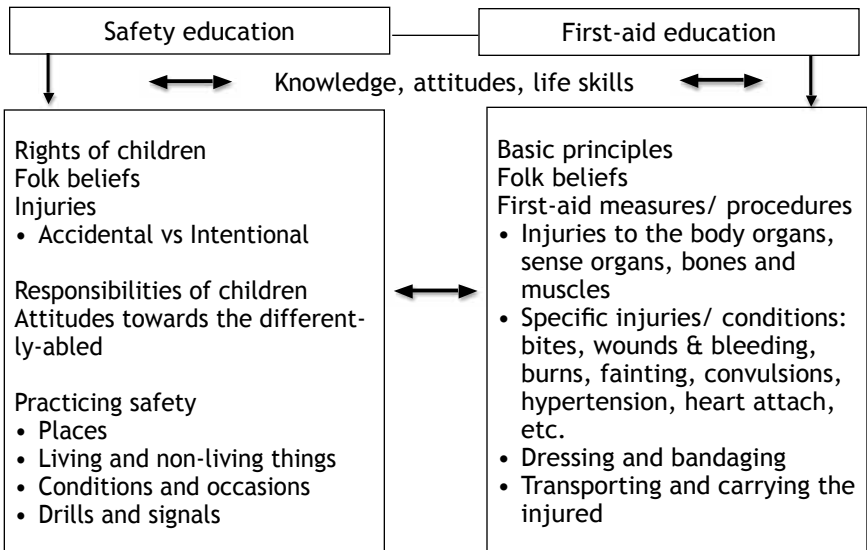
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FRAMEWORK FOR SAFETY AND FIRST AID



CHAPTER 8

FAMILY HEALTH

The family is the basis of every community and society. Caring for the family is always a joint effort, which entails caring for all members of the family from infants to the elderly. Family health is an integral part of a family's everyday life. Each family defines the meaning of health from its own particular vantage point. The health and well-being of each member of the family does not only include proper nutrition and disease prevention, but also includes ensuring the health and well-being of the community.

Family Health creates awareness among students about how the health and well-being of the family equates to the health and well-being of the community, and ultimately of society. Ensuring the health and well-being of a family and community means being aware of the self, and of other individuals, both in the family and community settings.

The area of family health covers population education and the effects of rapid population growth on the family, the community, society as a whole, and the environment. Family health also covers reproductive health under which sexuality education is included.

FAMILIES

The composition of the family is changing. A family can be thought of as a complex system, an organization of people who interact with one another and influence one another in many ways.

Families are deeply affected by the following: the economic system that determines their level of living and its stability or instability; the occupational system that may dictate where they live, when they move, and how much self-esteem the husband and wife derive from their jobs; the educational system that directs learning and self-concepts; the religious system that in-

fluences their philosophy of life, morals, social involvement and perhaps the number of children; the legal system that makes for more or less freedom of choice on family limitation, methods of childbirth and use of hospitals.

Despite the many changes and influences of the external environment which constantly affects the family, the basic elements of lasting family relationships still apply. Love, respect, honesty and communication with one another in the family is very important in their interactions. Dysfunctional family relationships often contribute to many health problems of an individual.

The family is also defined in Chapter 1, Article 149 of the Family Code of the Philippines as the foundation of the nation. It is a basic social institution which public policy cherishes and protects. Consequently, family relations are governed by law and no custom, practice or agreement destructive of the family shall be recognized or given effect

Structure of families

- Nuclear – father, mother and children
- Extended – includes grandparents, aunts, uncles and cousins
- Foster family / adoptive
- Single parenthood
- Current family unit – children under the care of a primary caregiver. Children may or may not be siblings. Caregivers may or may not be the biological parents, i.e. adoptive parents, aunts and uncles or grandparents.

Why people marry

According to the Family Code of the Philippines, marriage is a special contract of permanent union between a man and a woman entered into in accordance with law for the establishment of conjugal and family life.

The Philippine Civil Code defines marriage as an inviolable social institution whose nature, consequences and incidents are governed by law and not subject to stipulation except that the marriage settlements may to a certain extent fix the property relations during the marriage. It is the union of one man with one woman for the reciprocal blessing of a domestic home life and for birth, rearing and education of children.

Table 14 lists some reasons why people marry.

Needs of a family

- a. Physiological needs – basic needs for survival
- b. Safety needs – physical, emotional, mental, financial
- c. Belonging needs – belonging to a group, either family or people a child

- can consider as family; need to give and receive love; need for friends
- d. Esteem needs – self-respect, achievement, attention, recognition and reputation
 - e. Self-actualization – the summit of this hierarchy; quest of reaching one's full potential as a person

These basic needs have to be met for the child to develop holistically. Only when a family works together will these needs be addressed. This is where the extended family system comes in, especially in rural areas when family members live close by. When the parents are working, siblings, cousins, aunts, uncles, grandparents often come into the fore, to take care of the younger children in the family.

Role of the family

- Socialize the child – children develop their personality and acquire the bases for distinguishing between right and wrong within the intimate relationship of the family
- Social control – regulate social contacts and experiences of the young
- Transmitter of culture
- Economic unit – source of labor, holder of property, transmitter of wealth, consumer of goods and services
- Model for the establishment of another family
- Parents or caregivers, when parents are no longer living, support the family; manage the household; prepare the child for his adult place in society and to maintain that integration once it is made; care for the child's physical well-being; provide the child's essential needs
- Children love, respect and obey their parents or elders; do their best to learn while in school; perform tasks expected at home; provide for their parents when they become old

For children whose parents work overseas, the extended family system provides the socialization migrant children need. Like children of non-migrants, they are given household chores, which forms part of their responsibility training. The values transmitted to children are similar in both migrant and non-migrant families.

PARENTHOOD

People decide to become parents because this act satisfies need for attaining adult status and social identity. There is also a desire to carry on the family name, to establish continuity from past to future. Parenthood brings virtue and self respect. Of course, children give parents a feeling of achievement and competence, power, social comparison and economic utility.

There are a myriad benefits to having children. It is, undeniably, stimulating and fun, as well as exciting. The new parents would find themselves respond-

Table 14. Why people marry

Positive reasons to marry	Negative reasons to marry
<p>Love. Although love may not be the only reason to marry, it's an important ingredient in most successful relationships.</p>	<p>To make the relationship secure. If the relationship isn't secure before marriage, there's no reason to think it will be afterwards. It may be harder to separate after marriage, and this does not ensure happiness.</p>
<p>To make a commitment. The couple decides to be together forever, knowing each other's faults and failings.</p>	<p>Fear of being alone. Some people marry because they're scared that no one else will have them. Remember, it's better to be left on the shelf than spend your whole life in the wrong cupboard.</p>
<p>It's part of culture. The ceremony of marriage is an integral part of cultural or religious beliefs and an essential part of the couple's core value system.</p>	<p>Got pregnant out of wedlock/ for the children. On the whole, children benefit from living with two parents, but marrying purely for the child is unlikely to create a happy home environment, especially if the couple had no plans in the first place.</p>
<p>To start a family. The couple enjoyed a secure and committed relationship for some time and feel marriage is the best environment in which to bring up children.</p>	<p>Desire for a big wedding. The big white wedding may seem like a fairy tale come true, but it only lasts a day. Marriage is (supposed to be) for life.</p>
<p>To celebrate. Because the couple wants their family and friends to share with in their happiness and commitment as a couple.</p>	<p>To recover from separation. Some people want a second marriage to help them to get over the first - to prove that they're OK. But those feelings must come from within.</p>
<p>It's the right time. The couple has a solid and secure relationship and it feels like the logical next step.</p>	<p>To escape problems. Marriage is not an escape from an unhappy home or emotional hang-ups. It may even magnify one's existing difficulties by combining them with the mate's problems.</p>

ing to their daily lives in a different way e.g. it would be more fun to stay at home with the new baby instead of spending the night out in town. There is also a sense of destiny and family unity – that after marriage, having children is not far behind. The couple's, as well as the rest of the family's, love for the children bind the family more closely together. Family unity could not be more strong than in the hands of children.

However, there are also costs to having children. Parents invariably get more stressed when worrying over a child, regardless of the child's age. Worry is not only for the now but also over the future of the child, and of the fam-

ily. There is less free time for the couple to spend on their own without the children. In the early years, parents also experience an inordinate amount of fatigue as babies and small children need an almost round the clock attention. Lastly, the added financial costs of raising a family can often times be daunting. There is an increasing worry over the family budget, as well as future costs of care and schooling from elementary to college.

Responsible parenthood

Responsible parenthood refers to the will and ability of parents to respond to the needs and aspirations of the family and children. It is a shared responsibility between the couple to determine and achieve the desired number, spacing and timing of their children according to their own family life aspirations, taking into account psychological preparedness, health status, socio-cultural and economic concerns.

It is the primary right and responsibility of parents to get actively involved in the promotion of their children's well being through the provision of adequate care, attention and affection.

Psychologists have been interested in how parents influence the development of children's social and instrumental competence since at least the 1920s. Parenting is a complex activity that includes many specific behaviors that work individually and together to influence child outcomes. Although specific parenting behaviors, such as spanking or reading aloud, may influence child development, looking at any specific behavior in isolation may be misleading.

Most research into parenting styles rely on Diana Baumrind's (1966) concept, which is used to capture normal variations in parents' attempts to control and socialize their children. The four styles reflect different patterns of parental values, practices and behaviors, and a distinct balance of responsiveness and demandingness.

Indulgent parents. Also referred to as *permissive* or *nondirective*. These parents are more responsive than they are demanding. They are nontraditional and lenient, do not require mature behavior, allow considerable self-regulation, and avoid confrontation. Indulgent parents may be further divided into two types: democratic parents, who, though lenient, are more conscientious, engaged, and committed to the child, and nondirective parents, who are lenient, but do not provide direction for the child.

Authoritarian parents. Are highly demanding and directive, but not responsive. They are obedience- and status-oriented, and expect their orders to be obeyed without explanation. These parents provide well-ordered and structured environments with clearly stated rules. Authoritarian parents can

be divided into two types: nonauthoritarian-directive, who are directive, but not intrusive or autocratic in their use of power, and authoritarian-directive, who are highly intrusive.

Uninvolved parents. Are low in both responsiveness and demandingness. In extreme cases, this parenting style might encompass both rejecting-neglecting and neglectful parents.

Authoritative parents. Are both demanding and responsive. They monitor and impart clear standards for their children's conduct. They are assertive, but not intrusive and restrictive. Their disciplinary methods are supportive, rather than punitive. They want their children to be assertive as well as socially responsible, and self-regulated as well as cooperative.

In addition to differing on responsiveness and demandingness, the parenting styles also differ in the levels of psychological control. Psychological control refers to control attempts that intrude into the psychological and emotional development of the child through use of parenting practices such as guilt induction, withdrawal of love or shaming. One key difference between authoritarian and authoritative parenting is in the dimension of psychological control. Both authoritarian and authoritative parents place high demands on their children and expect their children to behave appropriately and obey parental rules. Authoritarian parents, however, also expect their children to accept their judgments, values and goals without questioning. In contrast, authoritative parents are more open to give and take with their children and make greater use of explanations. Thus, although authoritative and authoritarian parents are equally high in behavioral control, authoritative parents tend to be low in psychological control, while authoritarian parents tend to be high.

Effects on children. Parenting styles can predict child well-being in the domains of social competence, academic performance, psychosocial development and problem behavior. Research based on parent interviews, child reports, and parent observations consistently finds that

- Children and adolescents whose parents are authoritative rate themselves and are rated by objective measures as more socially and instrumentally competent than those whose parents are nonauthoritative.
- Children and adolescents from authoritarian families tend to perform moderately well in school and be uninvolved in problem behavior, but they have poorer social skills, lower self-esteem and higher levels of depression.
- Children and adolescents from indulgent homes are more likely to be involved in problem behavior and perform less well in school, but they have higher self-esteem, better social skills and lower levels of depression.

- Children and adolescents whose parents are uninvolved perform most poorly in all domains.

Family planning

A major part of responsible parenthood is being able to provide all the needs of the family. Family planning is the totality of human efforts to achieve human dignity, economic stability, health and happiness and welfare through:

- Birth regulation and spacing of children by the use of accepted scientific methods that are both culturally and legally accepted in the Philippine setting
- Treatment of infertility
- Family life and sex education
- Pre-marital guidance and marriage counseling
- Prenatal and postnatal care

Thirty-five percent of married women in the country are using modern contraceptive methods, according to the 2004 Family Planning Survey (FPS). One out of 10 married women uses a traditional method, while five out of 10 are not using any contraceptive method at all.

However, women in poor households are less likely to practice family planning than those in non-poor households. The use of family planning methods is most popular among elementary and high school graduates (49.5 percent) and is least popular among women who did not complete any grade (39.5 percent).

The practice of family planning depends on the woman's age, education and socio-economic standing. In the 2006 FPS, contraceptive use was highest among married women at ages 35 to 39 years and was lowest at ages 15 to 19 years. Married women with some elementary education were less likely to practice family planning than women with higher level of education. Those with no education were the least likely to practice it. Two out of 10 women with no grade completed, and four out of 10 with some elementary education practice family planning. By comparison, at least five out of 10 women having higher level of education practice family planning.

Benefits of family planning:

- Saves women's and children's lives
 - Mothers still die of childbirth and pregnancy with 172 maternal deaths/100,000 births.
 - Infants born to young mothers (under 18) are at greater risk of dying.
 - Infants born to women with four or more children are at high risk of death.
- Improves quality of life for women, men and children

- ❑ Couples will have the ability to choose the number of their children according to their means.
 - ❑ Large family size tends to inhibit physical growth of children because of poorer maternity care and poorer nutrition.
 - ❑ Couples enjoy more comfort at home; happier marital relations; sexual relations without fear of unintended pregnancy.
 - ❑ Women avoid unwanted and poorly timed pregnancies. When parents do not delay and adequately space births (when births are less than two years apart), the health of infants and their siblings is endangered.
 - ❑ Increased opportunities for participating in educational, economic and social activities are provided.
 - ❑ Children in small families perform better in school and on intelligence tests.
 - ❑ There is effective investment for helping to ensure the health and well-being of women, children, and communities.
- Helps relieve the pressures that rapidly growing populations place on economic, social and natural resources
 - ❑ There is less financial worry
 - ❑ Couples provide more love and care for children; better food, better health, better education and better chance of a good job in the future
 - ❑ Communities benefit from reduced strain on environmental resources, community health, educational and social services

Birth Plan for Mothers

Pregnancy is one of the most extraordinary human experiences a woman can have. It is best encountered in a mature and committed relationship that has the shared goal of raising a responsible and productive individual.

Pregnancy during adolescence is always considered a risky pregnancy, not only in terms of the physiological factors involved in giving birth, but also in terms of the psycho-emotional preparations for both the mother and her partner. In this light, the education of children and adolescents on reproductive health is necessary. They need to learn life skills that will be helpful in dealing with potentially difficult situations especially in a one-to-one relationship or with groups. The message that pregnancy is highly risky in adolescence should be expressed. Another message, not just for adolescents but for adults as well, is that the decision to get pregnant must be made with utmost deliberateness as it entails responsibilities for both parents during pregnancy and more importantly beyond it.

In the event of an unplanned pregnancy, however, expecting women ought to have access to health care services that will provide for the well-being of

the unborn child until he or she is born. In addition to the regular pre-natal visits and pre-natal care that pregnant women need to get from qualified health providers, expectant mothers should also prepare with their partners and with the rest of the family a birth plan as they approach their expected date of delivery.

Here are some recommendations that expecting parents and their families may consider:

- Know exactly where you will be delivering the baby. The DOH is now recommending that deliveries be made in accredited birthing facilities. This will assure that mothers receive quality care that can minimize possible problems and complications during the birthing process.
- Prepare your bag that contains your personal necessities (extra clothes, toiletries, infant clothes and blankets) way ahead of time and place them in a very accessible place at home. This way, when labor starts and the time to go to the birthing center comes, you can easily grab the bag and be on your way.
- Make arrangements with your partner or with other family members on the following matters:
 - Who would be accompanying you to the birthing center
 - Who would be staying with you for errands
 - Who would be left behind with the other children (if you have one) at home
- Decide on the name of the child. If the sex is known through ultrasound, you can already pick a name and even refer to the baby by name while s/he is still in the womb. If you have opted to discover the child's sex at the time of delivery, prepare two names, one for a boy and another for a girl.
- It would also be helpful to know ahead of time who would be the health care provider of your baby. Would it be at the local health center? Is it a private pediatrician? This way the continuing care of the child can be assured and proper endorsements made by the birthing facility.

CARING FOR THE FAMILY

In the Philippines, it is common for children to be in the care of extended family members. This does not automatically mean that the children are abandoned by their biological parents. Societal and economic factors come into play – parents may be working elsewhere, parents may be unable to care for the children. There may also be only one caregiver, as is usually the case in families with one parent as an overseas Filipino worker.

Research shows that majority of children who are not raised in a family headed by two married parents grow up without serious problems and some do exceptionally well. Yet, research also consistently indicates that children in single-parent families, children who experience parental separation, and chil-

dren who live in stepfamilies have, on average, a higher risk of negative outcomes compared with children who are raised by their biological or adoptive parents in a low-conflict marriage. Children in single-parent families are about twice as likely to have problems as children who live in intact families headed by two biological parents.

It is also common for children to take on the responsibility of caring or watching over their younger siblings, old grandparents or even a sick relative. Oftentimes, these children are given instructions to follow. However, when situations that are no longer covered by these instructions arise, the children are ill-equipped to make decisions. This section is included in this volume to provide brief how-tos for children, especially those in the elementary levels.

Hygiene.

[Refer to *Chapter 3 Personal Health for Care of the hands, feet, sense organs*].

[Refer to *Chapter 1 Growth and Development for Care of the different systems of the body*]

Bathing infants. Use lukewarm water, soap and a small towel when washing infants. Rub infants gently to clean them. Use a basin that is just big enough for the infant to prevent slipping.

Bathing toddlers. Soap children thoroughly and use shampoo on the hair. Toddlers should either be sitting or holding on to something to ensure that they do not slip or fall.

General cleanliness for infants. For newborns, the umbilical cord may be cleaned gently with cotton or a soft towel soaked in 70 percent isopropyl alcohol. Pat dry after cleaning and keep it dry until the cord falls off. Do not use cotton swabs to poke into the belly button too hard. Clean it with a soft towel, not a cotton swab. Change diapers regularly. Always clean the infant before putting on a fresh diaper. Cloth diapers are better than disposable ones. There are less chemicals that touch the baby's skin, and are less harmful to the environment as well. Make sure that diapers are washed properly and, as much as possible, dried under the sun. Change the baby's clothes daily. Always clean items that are put in baby's mouth e.g. milk bottles, nipples, teethers.

General cleanliness for young children. Change children's clothes when dirty or sweaty. Remind them to wash their hands after playing, before and after eating, after using the toilet. [Also refer to *Chapter 3 Personal health*]

Feeding infants. Frozen breast milk should never be put over direct heat. Prepare a cup or bowl of hot water and submerge the breast milk container for a few minutes until the breast milk becomes room temperature. Do not

refreeze thawed breast milk.

Always check the temperature of formula before giving it to the baby. Shake the bottle so all formula is an even temperature and drip a few drops on the inside of the wrist. If it's comfortably warm, it should be okay for the baby. Always taste the formula before giving to the infant to make sure that it is not spoiled.

When bottle-feeding the infant, make sure that the infant is not flat on his back. Turn the head a little to the side to prevent choking, or incline the baby as if being carried. Make sure the nipple is always filled with liquid. This prevents air from getting into the baby's stomach. If it seems the child is having trouble sucking, loosen the lid slightly. If he seems to be drinking too fast, tighten the lid a little.

Make sure to burp the baby during and after the feeding. This helps get out the air that has built up in his stomach. Lift the baby against the shoulder or sit the infant on the lap. Gently but firmly pat the infant's back to get up the air bubbles. The infant may spit-up some formula, which is alright. If the infant vomits, immediately consult a doctor or the barangay health worker.

Soft or liquefied food may be given to babies beginning six months. *Am* (rice water) is commonly given to infants who are starting on solid food. Contrary to popular belief, *am* has no calories and should not be a substitute for breastmilk or formula. Mash soft fruits and vegetables like carrots, squash, potatoes, banana. Breastmilk or formula may be added; the baby is familiar with the taste of milk, so this will help familiarize him with the new tastes. When feeding the baby, give only small amounts and make sure the baby swallows before the next one. Give only one new food at a time to check for any food allergy. After three days of feeding the same food, another type may be given.

Feeding young children. For children below two years old, food should be soft enough to prevent choking. Do not give instant noodles, junk food, soft-drinks. These contain no nutritional value, usually contain too much salt or sugar, and may ultimately be harmful to the child. Make sure that raw food (meat or vegetables) is properly washed before eating or cooking to prevent transfer of any bacteria. Meat, especially pork, should be cooked thoroughly. Taste food before giving to the child to ensure that it is not spoiled.

In case of accidents. Immediately approach an adult in case of accidents even when there are no obvious wounds e.g. infant or toddler fell off the bed or chair. The child must be brought to the health center for immediate assessment of injuries. [*Also refer to Chapter 7 Safety and First Aid*]

Caring for the sick and elderly

- Consult a medical health practitioner or the nearest barangay health center.
- Do not self-prescribe medicine or rely on pharmacy personnel to prescribe medicine [*Refer to Chapter 9 Consumer Health*].
- For fevers, give constant sponge baths to the patient. Take medicine as prescribed by the doctor.
- Keep the patient clean at all times, whether in the hospital or at home. Unsanitary conditions will become breeding grounds for bacteria, which could lead to a more serious illness, especially for the patient who already has a compromised immune system.
- Topical ointments or herbal or folk remedies may be used to assist in pain management (i.e. aciete manzanilla for gas, white flower for headaches) but these are not to be considered as curative.
- Help the elderly carry things. They should not carry anything heavy.
- Guide the elderly when climbing stairs, especially if their vision is impaired.

Community's role in meeting a family's needs

The community, especially in urbanized areas and in areas with migrant parents, must also take part in caring for the young. Where family members do not live close to each other, neighbors often step in to take care of the children in the community.

Finding caretakers is the least of the problems a family faces. First to be considered should be the number of members in a family unit. Too many members in a family simply means that there might not be enough resources to fulfill the needs (even if it is only up to safety needs) of the family. According to figures (March 2007) from the Social Weather Stations, 30 percent of Filipinos have experienced hunger from the period of January to March 2007.

It is only logical that if the income for food is enough for only four people, then an additional one or even two mouths to feed means that there is less food for all. Too many members in a family also has concomitant effects on the health of the community, especially in the rural areas where agriculture is the main source of income and food. There will be a lack of resources, not only for the family unit, but for the community as a whole. A fisherman finds out that to feed his growing family, and to have extra catch to sell, he has to be out at sea longer and to try and catch more and more. Multiply this one fisherman into a community of 20 to 30 fisherfolk, and marine resources may potentially be depleted. Depletion, in turn, causes a myriad of other problems – financial instability, lack of food, poor health.

When even physiological needs are not met, the family cannot be expected

to fulfill belonging nor esteem needs. Often, the caregivers' primary concern is how to put food on the table, thus failing to notice children's other needs. These children are neglected, not out of choice or spite, but simply because the primary caregivers are unable to give them the proper attention they need.

Crimes against children

Worse than neglect is violence against children. The most common and most visible is physical abuse where children often have unexplained bruises, wounds, fractures. Seldom seen, or seldom reported, are sexual, psychological and economic violence.

- Sexual violence: showing pornographic videos to children, making children the object of pornography, molestation (the term "bad touch" may be more easily understood by young children), rape and forcing them into prostitution
- Psychological violence: shaming children in public, destroying their belongings or pets, refusing their right to be with the primary caregivers they grew up with
- Economic or financial violence: withholding financial support meant for the welfare of the children, destruction of household belongings

The Violence Against Women and Children Act of 2004 (Republic Act 9262) provides protection for women and children even at the barangay level. If the teacher suspects that a child is a victim of violence, immediately follow school protocol and/or immediately secure a protection order.

- Barangay Protection Order: effective for 15 days; to be secured from a barangay official
- Temporary Protection Order: effective for 30 days; issued by the court
- Permanent Protection Order: effective until no longer needed; issued by the court

Women and children who are victims of violence should also be referred to a mental health professional, or the nearest barangay health center.

REPRODUCTIVE HEALTH

Reproductive health is defined as a state of physical, mental, and social well-being in all matters relating to the reproductive system, at all stages of life. Good reproductive health implies that people are able to have a satisfying and safe sex life, the capability to reproduce and the freedom to decide if, when, and how often to do so. Men and women should be informed about and have access to safe, effective, affordable, and acceptable methods of family planning of their choice, and the right to appropriate health-care services that enable women to safely go through pregnancy and childbirth.

Importance of Reproductive health

- Crucial part of general health, especially during adolescence and adulthood
- Prerequisite for social, economic and human development – human energy and creativity are driving forces of development. Such energy and creativity cannot be generated by sick, tired people.
- Central feature of human development
- Reflection of health during childhood
- Sets stage for health beyond the reproductive years for both women and men, i.e. later health and developmental problems
- Affects health of next generation – health of the newborn is largely a function of the mother's health and nutrition status and of her access to health care

Factors affecting fertility

The total fertility rate of the Philippines has shown a small but steady decline from 1980 to 2003. Women are having fewer children; the birthrate is currently at an average of 3.5 children for child-bearing women, a figure that has held firm for several years. The big change that has affected the total fertility rate is the difference in the number of women using modern methods of birth control compared to traditional methods.

Furthermore, substantial societal changes have improved Filipino women's lives and influenced their family-size goals. Women want even fewer children than they typically have. Despite significant overall advances, however, large economic inequalities remain within the Philippines—for example, between rural and urban areas, and across and within regions. Women living in less-affluent parts of the country have limited opportunities and options, and these variations are likely to be reflected in different patterns of reproductive behavior. On average, Filipino women have one child more than they want because of:

- High non-use of contraception among women who want to limit and space births
- Non-use of contraception due to concerns about adverse effects and husband's objection
- General higher preference of husbands for children

Family size is influenced by the following:

- Value of children
- Wanted fertility
- Unmet need for family planning
- Age of marriage
- Education of women

Although illegal, some women choose to have an abortion because they feel

they cannot afford to raise another child. Making modern contraceptive methods more accessible and available will hopefully bring down the rates of abortion.

Induced abortion is also an option for teenage pregnancies. Considering the stigma attached to pregnant teenagers, abortion, often conducted by non-medical practitioners, is considered a “better” option than carrying the baby to term. Non-awareness of the risks and consequences of abortion endanger the lives of these young adolescents.

Since the late 1970s, several studies have documented the occurrence of unsafe abortions and their negative impact on women’s health. An estimated 100,000 women are hospitalized and treated each year in the Philippines for complications due to induced abortion.

Improving reproductive health

The following recommendations should be taken if Filipino women’s reproductive health needs are to be met:

- Improved access to family planning services should be addressed by the government at the national and local levels.
- Family planning providers should improve and update their knowledge of the efficacy, advantages and disadvantages of all methods.
- Urban and rural women’s groups should work collaboratively to develop advocacy and education programs for women, including programs that provide counseling, information, education and training on reproductive health, gender and sexuality.
- Couples need education about the advantages of using modern contraceptive methods to achieve their family-size goals—and about the disadvantages, including failure rates and potential side effects, so that they can make appropriate and informed choices.
- National information campaigns could help meet educational needs.
- Husbands and partners should be included in the provision of family planning information and services.
- Adequate birth spacing, especially for rural women, should be promoted; this means that access to family planning must be improved to make birth spacing possible.
- Breastfeeding should be promoted, combined with recognition of the importance of meeting women’s increased energy and nutrient needs during lactation.
- Abstinence is still the most effective method if and when women want to space births.

Contraceptive use and STIs:

Millions of adolescents worldwide are sexually active and at risk of unwanted pregnancy and sexually transmitted infections (STI). Early sexual

Table 16. Types of contraception

Types	Advantages	Disadvantages
<p>Injections & implants: contains progesterone; essentially prevents egg from being produced. Effectiveness -injection 99.7% Implant 99.95%</p>	<p>Safe for people with diabetes and high blood pressure; long lasting; injection given every six months; implant lasts five years</p>	<p>Possible side effects - nausea, irregular bleeding; fertility may take up to a year to return.</p>
<p>Combined Pill: contains estrogen & progesterone; also prevents ovulation. Effectiveness - 97%</p>	<p>Protects against cancers of the womb or ovaries; helps prevent osteoporosis; regulates period; helps reduce PMS, no long-term effects; can be taken from 6 weeks after giving birth</p>	<p>Possible side effects - headaches, water retention, nausea, weight gain, depression; not recommended for smokers over 35, have diabetes or high blood pressure. Hormones could pass through breastmilk to infant. Possible reduced milk flow.</p>
<p>Mini Pill: makes it harder for sperm to enter uterus as it thickens the mucous in the cervix. Effectiveness: 95%</p>	<p>Recommended for people who are overweight, have high blood pressure, are a smoker, over 40 or are breastfeeding</p>	<p>Has to be taken at the same time each day; for breastfeeding women - small risk that progesterone could harm the baby</p>
<p>Condom: sheath that prevents transmittal of sperm after ejaculation. Often results in vaginal dryness, but do not use oil-based lubricant, as this may split the condom. Effectiveness: 86%</p>	<p>Easy to use with minimal health risk; widely available; many contain spermicide</p>	<p>Need to interrupt sexual flow to put it on; could slip off or tear; need to be removed straight after intercourse; may dull the sensation</p>
<p>Diaphragm/ Cervical Cap: must be used with spermicide; made from soft rubber they cover the cervix and need to be fitted; remove no later than 30 hours afterwards. Effectiveness: Diaphragm 80% Cervical Cap 60%</p>	<p>No hormones introduced into the body; no side effects on breastfeeding; can prevent STDs; can be inserted 6 hours before sex</p>	<p>Need to be inspected often for holes; bladder must be empty to insert them; may press down on bladder causing Cystitis</p>

Intrauterine Device (IUD): T-shape device that is inserted into the womb to prevent the implanting of a fertilized egg. Effectiveness: 98%	Works as soon as it is fitted, has no effect on breastfeeding or hormones	Heavy periods; uterine cramping; greater risk of pelvic inflammatory disease if there are multiple partners; yearly check required
Withdrawal: penis withdrawn completely from the vagina before ejaculation. Effectiveness: 81%	No side effects; nothing foreign introduced into the body	Does not protect against STIs; very difficult to prevent ejaculation in the vagina effectively; fluid that escapes from the penis before ejaculation can contain sperm from a previous ejaculation; represses male orgasm stage
Rhythm method: involves working out whether or not a woman is fertile, according to her menstrual cycle. Effectiveness: 76%	Approved by the Roman Catholic Church; needs expert advice so woman is given proper care; no side effects	Does not protect against STIs; not recommended for women with irregular menstrual cycles
Abstinence	100% effective	No disadvantages

relationships and reproduction can have a profound effect on the health and development of young women and their children. For instance, unprotected sexual relations among adolescents can result in unwanted and too early pregnancy and childbirth, unsafe abortions, and sexually transmitted diseases, including HIV/AIDS. According to the World Health Organization, 67,000 women die each year as a result of unsafe abortions, almost all in developing countries. It also can cut short educational and job opportunities.

- a. Adolescents face serious physical, economic and social consequences from pregnancy and sexually transmitted diseases. Sexuality education helps adolescents make responsible decisions.
- b. Early childbearing, unsafe abortion, and STIs threaten adolescents' health and future fertility.
- c. Teenage parents face many social and economic barriers.
- d. Sexuality education helps adolescents make responsible choices regarding sex and contraception.

[See Table 16 for types of contraception]

Sexual attitudes and behavior

Human sexuality has biological, cultural, psychological and religious influences. Everyone's

sexual feelings are different and the way these are expressed will depend on the type of relationship that is desired.

Sexual activity is a very personal thing. It should be based on understanding and respect for both partners as an expression of strong feelings or love. It is important to listen to your partner and respect his or her wishes. It is also best pursued in the context of marriage and in a long term relationship.

It is important to be aware of the possibility of pregnancy as well as infection from HIV and other sexually transmitted infections. Many young people use condoms in the first stages of a relationship and then progress to using the pill only. Using the pill provides no protection against HIV or other infections. It is very important to continue using a condom, even though the relationship may seem steady.

In a research study conducted by the Health Action Information Network in 2005, results show that knowledge of HIV, AIDS and condoms increases with age, and is high among those with high education and in-school ado-

Table 15. Sexual behavior and their risks and consequences

Sexual behavior	Risks and consequences
Sex Play - involves looking at and touching each other's bodies	One partner is coerced or forced (tricked or blackmailed)
Kissing - fundamental means of human affection	Risk of transmission of disease when kissing strangers or someone who is currently ill or has open sores around the mouth
Masturbation - touching, caressing one's genitals is a common behavior	Is the safest sexual behavior because it is done alone; embarrassment when caught; too much can interfere with daily activities and studies and is considered deviant sexual behavior
Petting - covers kissing, sexual touching of one's partner and his/her genitals	Carries the risk of pregnancy or infection with a sexually transmitted disease if heavy petting leads to intercourse
Oral sex - when one partner uses the mouth on and around the other partner's genitalia	Does not cause pregnancy; carries risk of infection with STIs
Outercourse - contact of genitals without penetration into the vagina	Risk of pregnancy because sperm can travel from the outside into the cervix to fertilize an egg
Intercourse - the act of placing the penis into the vagina	Risk of unwanted pregnancy and infection with STIs; might result in negative emotions in females when they feel that they are no longer "innocent"

lescents. Sixteen percent of youths (in a sample of 4,000) in the survey are sexually active. More young people from the major urban cities have engaged in sex. The sexual activities include oral sex, anal sex, penetrative sex and same-sex sex. Condom use, however, is still low among sexually active youth.

When it comes to attitudes towards the use of condoms, the youth can be classified as conservative. Even the 216 healthworkers included in the study believe that discussing condoms among youth only promotes promiscuity. Research, however, has shown that providing condoms and giving information on modern contraception has not increased promiscuity among adolescents. Among these healthworkers, a substantial 17 percent believe that using a condom is a sign of not trusting one's partner. This perception extends to the services they provide to young people, as these could be taken as an indicator of healthworkers' willingness to provide condoms to young people.

Similarly, the youth survey also found that there is greater confidence among young women to negotiate for condom use and decide on the timing and choice of their sexual partner, as well as discussing sexual issues with health service providers. This is a good indication that young people, especially the girls are becoming aware of their rights as regards information on sex related issues.

However, there is still a larger percentage of young adults who seem to have poor knowledge about STI/AIDS. A third of the respondents thought that AIDS can be cured and majority believed that they were not vulnerable to AIDS. Furthermore, premarital sex and inconsistent condom use were common. Unprotected sex with acquaintances, romantic partners or friends was not seen as dangerous.

The combination of immature sexual attitudes and lack of information places young adults at a risk of contracting STI, HIV/AIDS. The stifling of sex education in schools does not help in reducing this risk.

POPULATION

Philippine population will double in less than 30 years. Over 37 percent of the Philippines population is aged 15 or younger, and in the hotspots, the proportion reaches as high as 45 percent. Population momentum is expected to account for 65 percent of the country's foreseeable population growth.

Movements from rural areas to large, urbanized cities are often undertaken with the hopes of improved opportunities for economic or social advancement. Often considered less significant and often not considered are the potential costs of such moves. Changes of residence require large amounts of

time and effort to reestablish social networks, and may also result in disruptions of income-generating activities. Such changes might also exact a toll on the migrant's physical and psychological-well being.

Rural–urban migration in the Philippines is estimated at 200,000 annually to the urban centers especially Metro Manila. In the Philippines as of 2003, an estimated 61 percent of the population live in urban areas—third highest in the region after Singapore and Malaysia, and is expected to swell as the United Nations Fund for Population Assistance places the country's urban growth rate at 3.1 percent from 2000-2005.

Listed here are the primary causes of rural-urban migration:

- Poverty (Poverty incidence among agricultural households is about four times higher than the rest of the population)
- Joblessness
- Landlessness
- Militarization
- Use of Metro Manila as staging area for Filipinos applying for overseas contract work
- Availability of work in Metro Manila (both formal and informal sector)

Costs of rapid population growth. It is immediately obvious that a rapid increase in population means an inadequacy of community resources including food, water and housing. Improvements in education, health and environmental quality are difficult to achieve. Failure to improve these three major components of living subsequently results to a failure to achieve economic growth.

Furthermore, educational institutions cannot catch up with the exponential growth of student population. The current teacher-student ratio according to the official figures of the Department of Education (June 2007) is 1:36. However, it is common knowledge that there are classrooms where the ratio is 1:60 and even 1:75.

Once these children, who were underserved by the education sector, are grown, there are not enough employment opportunities, especially in the rural areas. Migrating to urban areas would then seem to be the answer. These migrants are forced to live in urban poor communities (slums) with poor sanitation and where basic social services, especially health services, are nil or absent.

Slum areas consist of shanties along creeks, river banks, sidewalks, railroad tracks. Water supply, electricity and other basic necessities are not entirely available. There is a marked increase of urban violence in densely populated communities, which will take its toll on the emotional and mental health

of children. There is also an increase in incidences of sexually transmitted diseases. Because of the dense population and lack of services, people tend to conduct unsanitary practices that lead to poor health.

All of these factors roll around in a vicious cycle — people with poor health find it difficult to work; because of intermittent work, there is often no food on the table; because there is no food, they remain in poor health.

Population management programs

National Economic Development Authority : Medium Term Philippine Development Plan 2004-2010

- Fight poverty by building prosperity for the greatest number of the Filipino people
- Open up economic opportunities
- Maintain sociopolitical stability
- Promote good stewardship
- Focus on strategic measures and activities which will spur economic growth and create jobs

Philippine Population Management Program

- Partnership between national government and local government units and non-government organizations
- Upholds the freedom of couples to choose from a menu of family planning/reproductive health services
- Respects cultural and religious beliefs in support of responsible parenthood.
- Ensures that poor couples are guaranteed access to family planning services.
- Helps couples and individuals achieve their desired family size within the context of responsible parenthood and sustainable development
- Improves the reproductive health of individuals and contribute to further reduction of infant mortality, maternal mortality, early child mortality
- Reduces the incidences of teenage pregnancy, early marriage and other reproductive health problems
- Contributes to policies that will assist government achieve a favorable balance between population distribution, economic activities and the environment

Department of Health: Women's Health and Development Program

Ensures women's health and development through participatory strategies that enable women to have control over their health and their lives

Health Sector Reform Agenda

- Integrate all existing and emerging health programs

- ❑ Principle 1 – health regulatory reform
 - » Strengthens the licensing and regulatory functions of the DOH to assure quality health services
 - » Implements a recognition and certification program for public and private health facilities

- ❑ Principle 2 – health operation reform
 - » Strengthens preventive and promotive strategies
 - » Reforms government hospitals
 - » Reestablishes district health system and two-way referral network

FOLK BELIEFS AND PRACTICES

Plenty of beliefs abound regarding reproductive health, pregnancy, childbirth and parenting. This section outlines some of the prevalent beliefs.

It's bad to take a bath when a woman is menstruating. It is actually during menstruation that women need to be more conscious about hygiene.

A pregnant woman should not sleep so much as this will cause beri-beri. On the contrary, sleep is of utmost importance in pregnant women. A growing fetus puts a lot of strain on a woman's body and she needs to get more sleep to re-fuel and keep going. Women are so tired because of the new hormones cycling through their bodies.

Heavy workload and unattended whims during the first three months of pregnancy may affect the development of the embryo. Organ formation occurs during the first three months of pregnancy, thus making the embryo more vulnerable to harmful external influences like drugs. Unnecessary stress/strain needs to be avoided during the first trimester when placental implantation is relatively weakest, thus preventing miscarriage or premature delivery.

Pregnant women avoid eating energy-rich foods (e.g. kamote and sweets) to prevent “exaggerated growth of the baby” and difficult deliveries. Excessive intake of energy-rich foods may increase the weight of both the mother and baby, which may restrain normal delivery, more so for mothers with small cervical openings.

A Manobo child is not weaned until the advent of another child, or until he, of his own accord, relinquishes the breast. This traditional belief was scoffed at in the early 1960s when bottle feeding and milk formula became

all the rage. Recently however, exclusive breastfeeding is recommended for at least six months. Solid food is gradually introduced and amounts increased through the months while continuing to breastfeed up to age one and after that for as long as mother and baby both want to. The World Health Organization recommends breastfeeding for at least two years.

Here are other examples of folk beliefs with no scientific basis:

- All windows and doors should be wide open for the laboring mother's easy delivery.
- Pregnant women should avoid witnessing an eclipse, so that her baby would not have the habit of winking its eyes abnormally.
- A pregnant woman is not allowed to cut her hair, for she will give birth to a bald-headed baby.
- To induce delivery, a towel soaked in warm water is placed on the abdomen to wake up the baby in the womb.
- A pregnant woman with a habit of viewing sunset will have Mongolian spots all over the body of her baby.
- A bit of placenta is sometimes mixed with the mother's food, if only to prevent her from suffering a relapse (binat).
- A pregnant woman should not work after sunset as this develops a fleshy substance in the placenta.
- A monkey's pelt or skin used by a pregnant woman will ensure a sound and easy delivery.
- Girls should not carry a heavy load during menstruation to prevent excessive flow of blood.
- Eating green mangoes during menstruation causes dysmenorrhea.
- It's not good to carry a child on one's back because by doing so, the child's teeth will not grow or will overlap each other.
- The first time a baby lies on its belly, the baby is raised with a pair of scissors so that she will become a dressmaker. If the baby is a boy, he is raised with a bolo so that he will become a good farmer.
- Hanging baby's clothes outside at night causes a baby's tantrum.
- Children must not be allowed to eat swordfish meat to prevent convulsions.
- An infant must not be taught how to count his fingers because he will only count the number of years of his/her life
- A sick person looking at the dead is likely to follow suit.
- Recuperating patients should not go near a dead man in order to avoid relapse.
- Sleeping after taking a bath, especially at night, causes blindness.

LIFE SKILLS FOR A HEALTHY FAMILY HEALTH

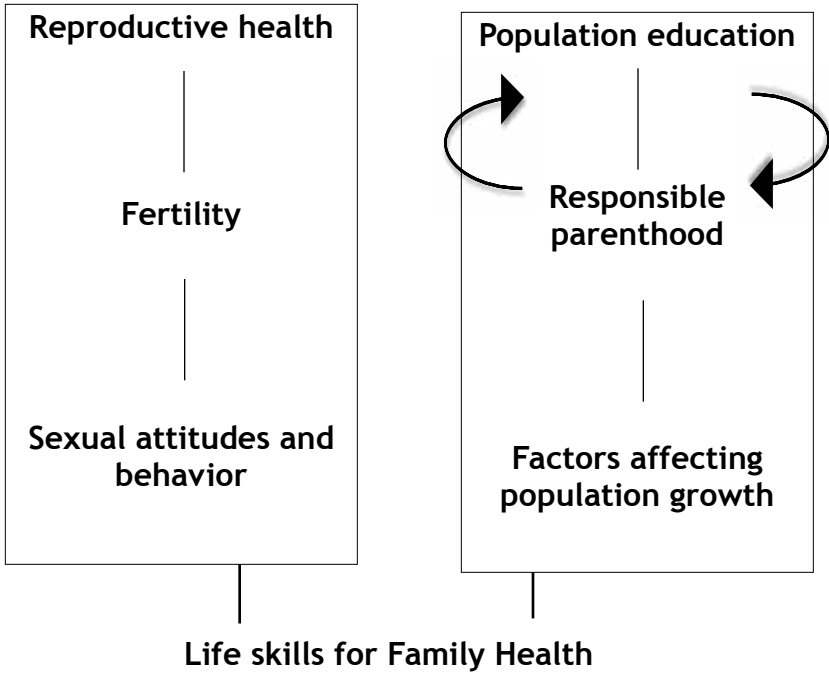
1. Communication skills. Communicate needs within the family and within the community. Report incidences of neglect and/or abuse.

2. *Problem solving skills.* Determine the best course of action to take when problems arise. Decide what's best for the family and not just for the self.
3. *Evaluating alternatives.* Determine the best choice among those available.
4. *Making wise health decisions.* Keep oneself educated before making decisions. Prioritization, especially if resources are lacking.

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FRAMEWORK FOR FAMILY HEALTH



CHAPTER 9

CONSUMER HEALTH

*All things should be laid bare
so that the buyer may not be liable
in any way ignorant
of anything the seller knows.
- Cicero*

Everyone is a consumer—of health information, health products, and health services. Health information ranges from things we hear from people around us, from media and from other sources that affect our health. Health products are things that we use—medicines, clothes and shoes, food, school supplies, in fact anything that affects our health. Health services are those provided by health practitioners—physicians, dentists, nurses, therapists and other health workers—including places that provide health services—hospitals, clinics, health centers and others.

Consumer health education is the wise selection and use of health-related information, products and services. It is integrated in the school curriculum from elementary, secondary and tertiary levels as mandated by the Consumer Act of the Philippines.

CHARACTERISTICS OF A WISE CONSUMER

- Seeks reliable sources of information
- Is well-informed and knows how to make wise decisions
- Does not believe health information right away and does not easily accept statements in media or advertising
- Is wary of unskilled health practitioners and can identify quacks and quackery
- Selects health practitioners with great care and questions fees, diagnoses, treatments and alternative treatments
- Reports frauds, quackery and wrong-doing to the proper authorities

Consumer skills

Young as they are, children and adolescent consumers need to develop some skills so as not to fall victim to unscrupulous people out to mislead, cheat and

take advantage of their innocence or ignorance. Consumers should develop five important health skills:

Assertiveness. To be assertive means to stand up for one's rights, and to be a self-advocate. Unfortunately, Filipinos have been reared to be submissive and not to question authority, like for example, a health practitioner. Students should be taught how to practice constructive and polite confrontation without being aggressive and discourteous. It might turn out to be a learning experience for both the student and the other party. However, this requires practice through role playing and other learner-centered strategies in the classroom.

Budgeting. Budgeting prevents overspending. Students can be taught how to budget by giving them a weekly allowance and teaching them how to spend their money and save some. They should be taught to establish an upper spending limit and stick to it to avoid impulsive buying.

Bargaining. Bargaining is almost expected of a Filipino buyer and is a game in the marketplace. Students should be taught how to bargain without being obnoxious to get the best price for a product.

Comparison shopping. Teach the students to compare prices of products from different stores to enable them to spend their money wisely and to get their money's worth. Comparing products can also be done through the phone, which can save time, energy and money.

Data collection. The wise consumer should read information about products and services from reliable sources so that they will not be victimized. If given a prescription by a physician, the wise consumer asks information about it.

The teacher can train students to develop this skill by asking them to share information from health literature or newspaper that they have read and evaluating the same.

In addition there are core life skills that should also be developed among the students for them to become wise consumers, among them—

- Effective communication
- Critical thinking skills
- Problem-solving
- Decision-making skills
- Interpersonal skills
- Productive/entrepreneurial skills

Influences in the choice of health information, products and services

Children are barraged with advertisements of health products and services, especially food, toys, and restaurants on television, radio, newspapers and other media. This is probably one of the biggest influences in a child's choice of products and services.

Other factors that influence the choice of health information, products and services:

- Consumer's age and grade level
- Family members, friends and peers
- Religion
- Socio-economic status
- Physical and emotional needs, motives and personality

RIGHTS AND LEGAL PROTECTION OF CONSUMERS

The Consumer Act of the Philippines is the law that—

- Protects the interest of the consumer;
- Promotes his/her general welfare; and
- Establishes standards of conduct for business and industry

Under the Consumer Act are eight basic consumer rights:

The right to basic needs. This right guarantees survival, adequate food, clothing, shelter, health care, education and sanitation. One should keep in mind that the highest-priced or most expensive product in the market may not necessarily be the best in quality. Be vigilant in ensuring continuous access to a wide assortment of competitively-priced goods and services.

The right to safety. This is the right to be protected against the marketing of goods or the provision of services that are hazardous to health and life. Check the labels. It should contain the proper information about the product, its use and how to operate it, also precautions or warning signs. If no one in the store can explain satisfactorily things about the product, try to contact the manufacturer and give the pertinent details needed in determining the product easily, like code number and date of purchase, for easy product identification.

The right to information. This is the right to be protected against dishonest or misleading advertising or labeling and the right to be given the facts and information needed to make an informed choice. Before purchasing a product, it is very important to read the label carefully so as to know its use, content (especially chemical ingredients), number of pieces and how to care for the product.

The right to choose. This is the right to choose products at competitive prices with an assurance of satisfactory quality. The biggest size may be cheaper, but it may not be what is needed. Canvass price before purchasing a product or signing a contract. Read the manuals or instructions carefully to be able to compare one product with another. This includes the fine print, which might contain the information needed to determine what product would serve the consumer better.

The right to representation. This is the right to express consumer interests in the making and execution of government policies.

The right to redress. This is the right to be compensated for misrepresentation, shoddy goods or unsatisfactory services. Manufacturers and store-owners should replace defective goods. The old policy of “No return, no exchange” is actually a violation of the law nowadays. If the product is defective, go back to the store where the item was bought and look for the Consumer Information Welfare Desk. Request a replacement, refund or if needed, have the defective item repaired. If the manager or store representative does not act on the complaint, proceed to the agency, which has jurisdiction over the case. Bring the necessary documents, like a complaint letter and a copy of the product receipt and other documents vital for the mediation. Be sure to attend the mediation conference.

The right to consumer education. This is the right to acquire the knowledge and skills necessary to be an informed customer. The Consumer Act of the Philippines mandates the integration of Consumer Education in the school curriculum from elementary, secondary and tertiary levels. Aside from learning about consumer health in school, scan newspapers, magazines and other reading materials for articles or news bits, which educate consumers on how to get the best value for their peso.

The right to a healthy environment. This is the right to live and work in an environment that is neither threatening nor dangerous and, which permits a life of dignity and well-being. Consumers should be aware of the kind and extent of pollution occurring in their locality, e.g. air, noise or odor pollution so that they can address the problem.

Help for the consumer

Consumers should be vigilant so that they will not be victimized, but if they do not know their rights, they cannot protect themselves from being cheated. There are government agencies that help consumers:

Bureau of Food and Drugs of the Department of Health. It inspects foods, drugs, devices, and cosmetics to ensure that they are not harmful. It demands proof of the safety and effectiveness of a new drug before it is

marketed and recalls unsafe drugs or other substances from the market. It also enforces the law against illegal sale of drugs, investigates the safety and truthfulness of labeling claims and checks importation of foods, drugs, devices and cosmetics to ensure that they comply with the law.

Bureau of Product Standards of the Department of Trade and Industry. It educates the public on product standards and other consumer-related concerns.

Department of Agriculture. It inspects meat and food animals before slaughter to prevent any diseased meat from reaching the market.

Department of Energy. Its Philippine Efficient Lighting Market Transformation Project promotes energy-efficient lamps to reduce power consumption and save on energy costs.

Bureau of Posts. It investigates any incidence of mail fraud and regulates attempts to sell worthless or harmful products through the mail.

There are also non-government agencies that help the consumers e.g. chambers of commerce, organizations of business companies, professional organizations like the Philippine Medical Association, Philippine Dental Association, newspapers, which feature columns about consumerism, to name a few.

Problems and Issues

It would be well for students to bring out problems and issues related to consumer health, but as a starter the teacher can also mention some:

- Too much health information coming from different sources
- Rising cost of health services
- Generic vs specific drugs

CONSUMER HEALTH INFORMATION

Consumer health information includes general health information needs of the public to specific information needs of patients. It is information that people require to make wise choices and decisions about their health or the health of their loved ones. Consumer health information must be timely, relevant, culturally appropriate, accessible and delivered in a relevant format.

Consumer health literacy

Consumer health literacy is the ability of a person to get, interpret and understand consumer health information, products and services and the ability to use them in ways that promote health. Examples of basic health information are following doctors' instructions or being able to take medication properly, according to instructions in the literature about the drug.

Reliable and unreliable sources of health information

The quality and relevance of consumer health information is as questionable as other types of information readily available today, especially with the advent of computers. In the elementary grades, pupils should be taught to distinguish between reliable sources of information, such as professional practitioners (doctors, nurses, dentists, health educators, etc.) and unreliable sources of information (friends, playmates, neighbors not qualified to give information, etc.).

Reliable health information comes from the following:

- Department of Health and its agencies, like the Bureau of Food and Drugs
- Medical schools, such as the University of the Philippines College of Medicine and the Philippine General Hospital
- Organizations whose focus is research and teaching the public about specific diseases or conditions, such as the Health Education Association of the Philippines, the Philippine Cancer Society, etc.
- Medical and scientific journals, although they are difficult to understand because they use technical terms that the medical community is familiar with

Folk beliefs and practices

There are certain folk beliefs that also guide consumers when making purchase decisions or even in making decisions in the course of daily living. The following have no scientific basis:

- Buying clothes for the sick causes death.
- Buying and selling needles and pins at night will make them rusty.
- Sell shoes; don't give them away.
- Sleeping with wet hair will cause blindness.
- Failure to ask permission from spirits or saying "tabi po" when throwing something can cause illness.
- Trimming fingernails at night is bad.
- Turning the plate when somebody arrives or departs will prevent accidents.
- Urinating on one's hands and feet cures excessive perspiration.
- Getting up from the left side of the bed brings bad luck.
- Inverting clothes when lost in the forest will enable one to find his/her way home.
- Admiring or praising a baby can make the baby sick (usog).
- Washing the face at night can cause pimples.
- Wearing amulets makes one invulnerable.
- Burying animals under fruit trees ensures sweet fruits.
- Skipping breakfast will make one lose weight.

However, some folk beliefs and practices do have scientific explanations that

may support the prevalence of the belief.

- Buying plenty of diapers makes child urinate often. This is probably because there are many diapers. Hence, the tendency is to change every time the child urinates.
- Eating shrimps, crabs and salted fish can cause skin diseases. There are people who develop allergic reactions to certain seafood.
- Eating fish and peanuts can make one intelligent. Fish and peanuts are rich in protein. There is no food good for only one body part.
- Guava leaves are good for cleaning wounds. Guava leaves have antiseptic and astringent qualities that prevent wounds from being infected.
- Bulbs and fresh leaves of garlic are good for hypertension. Garlic decreases the production of a hormone that raises blood pressure; it also lowers cholesterol.

Evaluating health information

Every day students are bombarded with health information from people in their immediate environment: the media—television, newspapers, radio, literature, including the internet. There is therefore a need for students to learn how to evaluate the reliability of the information. The following criteria can be used to evaluate health information:

Credibility. This includes the source and recency of the information.

- Source: Who is giving the information? Is the person/ organization/ office qualified to give the information?
- Recency: Is the information up-to-date? If the information is older than three years, try to find some more recent information to go along with it.

Content. This includes accuracy and completeness of the information as well as an appropriate disclaimer.

- Accuracy: Is the information correct and complete? Is there scientific basis for the information? Students should be aware that testimonials are not evidences. If the information states 100 percent success or 100 percent failure, it usually is not honest.
- Disclaimer: Is there a disclaimer stating the limitations, purpose, scope, authority and currency of the information? What is the source of the information? The disclaimer should also emphasize that the health information is general and not medical advice.
- Completeness: Is the information complete and balanced? Does it give only a one-sided view with critical information missing? Does the information include pertinent facts, negative results and a statement of any information not known about the subject? Read opinions on different sides before making a decision.

Disclosure. This includes telling the consumer of the purpose for giving the

health information and whether the source of information is marketing products and services or a primary information content provider.

- Purpose: What is the purpose for giving the information?
- Caveat: Is the source of information selling products and services or are they primary information content providers?

Interactivity. This includes feedback mechanism and means for exchange of information among the consumers. Is there a way for consumers to offer their comments, corrections and criticisms? Can they ask questions about the information provided?

HEALTH PRODUCTS

These are some medicines and health products consumers commonly use:

- Pharmaceuticals for internal and external use
- Personal care products
- Food
- Detergents
- Insecticides
- Disinfectants
- Pesticides
- Alternative health products—aromatherapy, flower essences, etc.
- Health books
- Health equipment—adaptive, emergency services, etc.
- Medical uniforms

Over-the-counter Drugs

- ❑ Analgesic to relieve pain
- ❑ Antibiotic ointment that reduces risk of infection
- ❑ Antacid that relieves upset stomach

- ❑ Antihistamine that relieves allergic symptoms
- ❑ Syrup of ipecac that induces vomiting
- ❑ Decongestant that relieves stuffy nose and other cold symptoms
- ❑ Fever reducer for adults and children
- ❑ Hydrocortisone that relieves itching and inflammation
- ❑ Antiseptic that helps stop infection

Health products

- ❑ Adhesive bandages
- ❑ Medicated plastic strips
- ❑ Gauze pads
- ❑ Tweezers
- ❑ Thermometer
- ❑ Calibrated measuring spoon
- ❑ Alcohol wipes
- ❑ Disinfectant

Cosmetic products

Natural health products

- ❑ Vitamins and minerals
- ❑ The 10 herbs that have been tested and proven to have medicinal value and approved by the DOH are the following (Figure 17):
 1. Akapulko (ringworm bush)—for ringworm and skin (fungal) infections
 2. Ampalaya (bitter gourd)—for non-insulin dependent diabetic patients
 3. Bawang (garlic)—to control blood pressure
 4. Bayabas (guava)—for use as antiseptic to

disinfect wounds and mouthwash or tooth decay and gum infection

5. Lagundi (5-leaf chaste tree) —for cough and asthma
6. Niyog-niyogan (Chinese honeysuckle)— for intestinal worms, particularly ascaris and trichina
7. Sambong (Blumea camphora) for urinary stones
8. Tsaang gubat—for mouthwash
9. Pansit-pansitan—for arthritis and gout
10. Yerba Buena (peppermint)—as analgesic to relieve body aches and pains

Tips in handling medicinal plants

- If possible, buy herbs that are grown organically—without pesticides.
- Medicinal parts of plants are best harvested in the morning. Avoid picking leaves, fruits, nuts after heavy rainfall.
- Leaves, fruits, flowers or nuts must be mature before harvesting. Less medicinal substances are found on young parts.
- After harvesting, if drying is required it is advisable to dry the plant parts either in the oven or air-dried on screens above ground and never on concrete floors.
- Store plant parts in sealed plastic bags or brown bottles in a cool dry place without sunlight, preferably with a moisture absorbent material like charcoal. Leaves and other plant parts that are prepared properly, well-dried and stored can be used up to six months.

Tips on preparation for intake of medicines

- Use only half the dosage prescribed for fresh parts like leaves when using dried parts.
- Do not use stainless steel utensils when boiling decoctions. Use only earthen, enamel, glass utensils.
- As a rule of thumb, when boiling leaves and other plant parts, do not cover the pot, and boil in low flame.
- Decoctions lose potency after sometime. Dispose decoctions after one day. To keep fresh during the day, keep lukewarm in a flask or thermos.
- Always consult with a doctor if symptoms persist or if any sign of allergic reaction develops

In 1997, Republic Act 8423 known as the Traditional and Alternative Medical Act was approved, legitimizing alternative medicine in the Philippines:

- Acupressure is an ancient massage skill that is a mixture of massage and acupuncture and makes use of firm thumb or fingertip massage on pain-relieving pressure points, which are the same for those used in acupuncture.
- Chiropractic is relieving pain through joint, muscle or spine manipulation through the skillful use of the hands.

Akapulko



Ampalaya



Bayabas



Sambong



Niyog Niyogan



Lagundi



Tsaang Gubat



Yerba Buena

Pansit Pansitan



Bawang



Fig. 17 Medicinal plants

Source: *Philippine Institute of Traditional and Alternative Health Care*

- Nutritional therapy
- Reflexology is the treatment of illness by massaging reflex areas in the feet.

Role of advertising

Every day people are barraged with advertisements of health products that use consumer psychology to manipulate them to buy the advertised products. Business spends millions of pesos in advertising health products, which is a major reason for the high cost of the products.

Students should be taught to critically evaluate advertisements, not only its content but also such features as the use of color and graphics. They should also be taught to critically identify and analyze the different approaches used by manufacturers to sell their products. Consumers need to consider the following questions:

- Who is the intended consumer?
- What is the purpose of the advertisement?
- Is the ad straightforward and factual? Is the health information reliable and trustworthy? Which information, if any, has been left out?
- Is any important information omitted? (product label is needed to determine this)
- What, if any, psychological approach or gimmicks are used to sell the product? If gimmicks are used, are they successful?
 - Loaded language is a form of propaganda that uses false or misleading claims to sell the product.
 - » *Inflated or boastful language.* In print, there is liberal use of exclamation points—sometimes more than one—at the end of sentences and phrases. Superlative adjectives like “fantastic,” “time-tested or new-found treatment” and “magical” are examples of inflated language.
 - » *Sounds too good to be true.* Sometimes advertisers promise immediate results or other claims that are incredulous in order to be above their competitors. Consumers should be suspicious of products that claim to cure a wide range of unrelated diseases—especially serious diseases. No product can treat every disease and condition, and for many serious diseases, there are no cures, only therapies to help manage them. There is no truth in “one product does it all!”
 - Fear or love
 - Satisfy present needs
 - Personal testimonial by an attractive spokesperson or athlete—Testimonials are personal case histories that have been passed on through the media or by word of mouth. It can also just be completely made up.
 - Food styling

- ❑ Special photographic techniques
 - ❑ Cost—The cost-effectiveness is emphasized if it is cheaper than a competing product.
 - ❑ Repetition—The product is repeatedly advertised in the media. Consumers usually buy a product they have heard about over one they have not heard about, even when the message does not have useful information.
 - ❑ Comedy appeal
 - ❑ Bandwagon appeal—This approach tries to convince the consumer that “everyone” is already using the product, using such words as “used by people all over the world,” “the nation’s leading,” “preferred by most mothers for more than 50 years.”
 - ❑ Scientific appeal—This is the “hospital tested” and “recommended by most doctors” approach. Being tested in a hospital or laboratory means nothing. The product might have been tested and found to be no better or worse than similar products. That doctors recommend the ingredient or substance found in a product does not mean they endorse a particular product containing those ingredients.
- What human weaknesses is the message playing on?
 - Are there any negative or side effects for consumers to consider?
 - Is the manufacturer credible?

Health fads and health fraud

Health frauds are articles of unproven effectiveness that are promoted to improve health, well being or appearance. The articles can be drugs, devices, foods or cosmetics for human or animal use.

How are health frauds promoted? These are some techniques used by health fraud marketers:

- *One Product Cures All*
- *Personal Testimonials.* These are difficult to prove. They are often personal case histories that have been passed on from person to person. The testimony could also have been completely made up.
- *Quick Fixes.* This suggests that a product can bring quick relief or provide a quick cure, especially if the disease or condition is serious. Fraud marketers use ambiguous language like “in no time at all” or “in days” which are not definite and which can be misinterpreted.
- *Natural.* Nowadays, there are so many products advertised as natural, suggesting that it is safer than conventional treatments. This does not necessarily mean “safe” because some plants are poisonous and therefore can do more harm than good. Besides, any product—whether synthetic or natural—strong enough to work like a drug can



also be strong enough to cause side effects.

- *Time-tested.* This suggests that it's both a breakthrough and an old remedy. Be wary of such phrases as “miracle cure,” “exclusive product” or “new discovery.” If a product is an approved cure for a serious disease it will be widely reported in the media and prescribed by health professionals—not advertised on TV or the internet, where the marketers have unknown, questionable or nonscientific backgrounds.
- *Satisfaction guaranteed.* Marketers of fraudulent products rarely stay in the same place for long; hence you most likely will not get your money back.
- *Paranoid accusations.* The claims give the impression that the medical profession and legitimate drug manufacturers try to suppress unorthodox products because they threaten their financial standing.
- *Meaningless medical jargon.* Some fraud marketers use terms and scientific explanations that may sound impressive and have an element of truth in them. Fanciful terms generally cover up a lack of scientific proof.

All products should be tested. Consult a doctor or other health professionals, especially if the product is new. If it's an unproven or little-known treatment, always get a second opinion from a medical specialist. Consult family members and friends. Be wary of people who tell you to avoid talking to others because “it's a secret treatment or cure.”

Check with the DOH or the Bureau of Food and Drugs to find out whether other consumers have lodged complaints about the product or the product's manufacturer. Check with the appropriate health professional group, for example, the Philippine Medical Association if the products are promoted for particular diseases.

Package and labels of health products

The BFAD regulates safety, manufacturing and product labeling, including claims in labeling, such as package inserts and accompanying literature.

Look for the following when selecting medicines, especially when buying over-the-counter drugs:

- Active ingredients and purpose
- Uses / indications
- Warnings—when not to use the medicine, when to stop taking the medicine, when to see a doctor and possible side effects
- Directions—dosage information
- Any recent significant product changes
- Expiration date—when to dispose of it
- Tamper-resistant features should be intact

Using, storing, and disposing of health products

- Wash all cuts and scrapes thoroughly with soap and water before applying antibiotic ointment.
- Do not give aspirin to children because it has been linked to Reye syndrome—a rare disorder that affects the brain and liver and in some instances, can kill children. Check with the doctor for a suitable substitute for reducing a child's fever.
- Never refer to medications as candy. If children find medicine on their own, they're likely to remember that it was referred to as candy.
- Pay particular attention to dosage instructions. The potency levels of medications for children are very different from those for adults. Consumers should always use the dosage instrument that comes with the package.
- Be careful with iron-containing supplements. Iron tablets are one of the leading causes of accidental deaths in children.

The usual place where medicines are kept at home is the bathroom medicine cabinet. This is not a good place to keep medicines. Showers and baths create heat and humidity that can cause some medicines to deteriorate rapidly. A cool, dark and dry place, such as the top of a linen closet, preferably in a locked container and out of the reach of children, is best for storing medicines.

- Clean out medicine cabinet at least once a year.
- Discard expired medicines, damaged containers and old supplies.
- Keep all medicines in original containers so that no one takes the wrong tablet/ capsule.

Being a wise consumer of health products

A wise consumer of health products will consider the following before buying or using the products:

- Is the use of this product supported by scientific evidence? If so, are there any conflicting results among various studies? Do the subjects' age, health condition, fitness level, etc. match those for whom the ad is directed? Were there limitations and/or flaws in these studies?
- What, if any, contribution would the consumption of the product make to the nutrient intake, physique or fitness level of the intended consumer?
- Could some less expensive product be used to obtain the same results?
- What hazards might be associated with the use of this product? Are there any conditions (e.g. medical, age-related) that would contraindicate the use of the product?

HEALTH SERVICES

Criteria for selecting health services

Look for a doctor who:

- Is rated to give quality care
- Has the training and background that meet your needs
- Takes steps to prevent illness (for example, talks to you about quitting smoking)
- Has privileges at the hospital of your choice
- Is part of your health plan, unless you can afford to pay extra
- Encourages you to ask questions
- Listens to you
- Explains things clearly
- Treats you with respect
- Makes you feel comfortable

When choosing a treatment, make sure you understand:

- What your diagnosis is
- Whether treatment is really needed at this time
- What your treatment options are
- Whether the treatment options are based on the latest scientific evidence
- The benefits and risks of each treatment
- The cost of each treatment

Look for a hospital that:

- Is accredited
- Is rated highly by the Department of Health or consumer or other groups
- Is one where your doctor has privileges, if that is important to you
- Is covered by your health plan
- Has experience with your condi-

tion

- Has had success with your condition
- Checks and works to improve its own quality of care

Look for long-term care that:

- Has been found by government agencies, accreditors or others to provide quality care
- Has the services you need
- Has staff that meet your needs
- Meets your budget

Look for a health care plan that:

- Has been rated highly by its members on the things that are important to you
- Does a good job of helping people stay well and get better
- Is accredited, if that is important to you
- Has the doctors and hospitals you want or need
- Provides the benefits you need
- Provides services where and when you need them
- Meets your budget

Quackery

There are different models of medical treatment, some valid and time tested, some new, and some still questionable because they avoid scientific inquiry.

- Conventional medicine practiced by licensed physicians and certified in their fields
- Approaches to health care as biofeedback and holistic health, which may be valuable in treating certain health conditions
- Quackery or the use of worthless approaches that often promise miraculous results.

Many consumers have been victimized by quacks because of ignorance, the need to avoid costly medical services, the promise of cures or relief that medical practitioners cannot offer, and the wish to avoid surgery or other painful medical treatment.

Quackery is practiced in many health areas, such as medicine, drugs, healing devices, diets and appearance-enhancing procedures. Some of the warning signs of quacks include:

- Offers a guaranteed quick cure for an illness with a “miracle drug” or treatment
- Uses fear strategies to convince the patient of his/her need for the cure
- Claims of victimization by other physicians in the Philippine Medical Association
- Underrating traditional medical practice
- No use of surgery
- Use of devices, gadgets and secret formulas to convince patients that their illness is cured

In some cases, patients believe that quacks provide them with relief or cure, which oftentimes is psychological. If the “patient” believes that s/he is getting help, the problem disappears. If indeed the person is sick, it is also possible that the natural healing powers of the body may be at work. Finally, temporary relief or remission might be mistaken for a cure.

Quackery is often the cause of delayed proper treatment, such that when the patient seeks the help of a medical doctor, the illness has either gotten worse or treatment is no longer possible.

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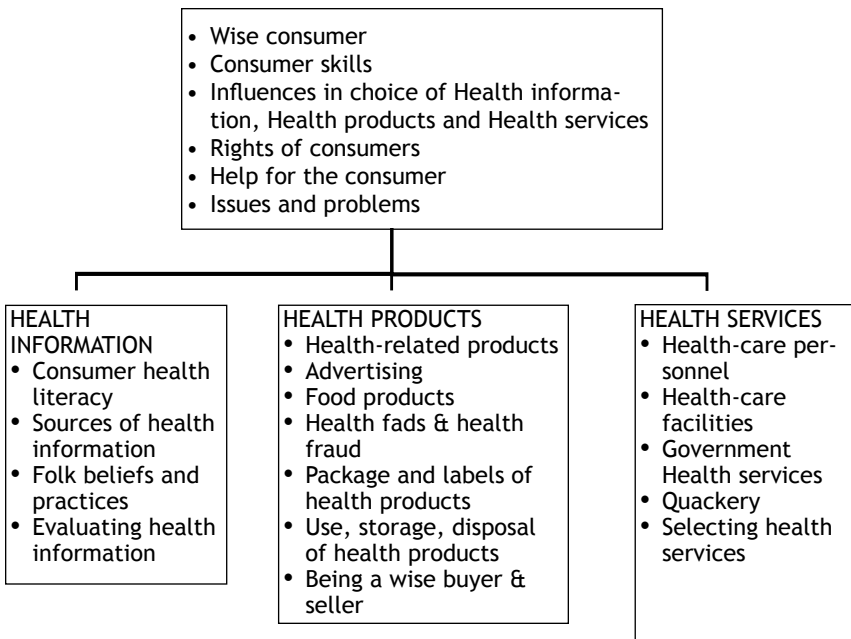
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FRAMEWORK FOR CONSUMER HEALTH



CHAPTER 10

COMMUNITY HEALTH

Community health is defined as the art and science of maintaining, protecting, and improving the health of all the members of the community through organized and sustained community efforts. A healthy community embraces the belief that health is more than the absence of disease; a healthy community includes those elements that enable people to maintain a high quality of life and productivity.

According to the World Health Organization (2002), the characteristics of a healthy community include:

- A clean and safe physical environment
- An environment that meets everyone's basic needs
- An environment that promotes social harmony and actively involves everyone
- An understanding of local health and environment issues
- A community that participates in identifying local solutions to local problems
- A community whose members have access to varied experiences, means of interaction and communication
- Accessible and appropriate health services and facilities
- The promotion and celebration of historical and cultural heritage
- A diverse and innovative economy
- A sustainable use of available resources for all

Community health services are designed to reduce the risk of ill-health and promote well-being in a community considering current facilities, priorities, and needs of the people. These services include medical and other health services, control and prevention of infectious diseases, adequate food supply, water and sanitation, waste management, injury prevention, health promotion and education, and the maintenance of a healthy environment.

PRIMARY HEALTH CARE APPROACH

Health is a universal human right. The state of complete physical, mental, and social well-being and the attainment of the highest possible level of health is an important social goal. The Primary Health Care (PHC) Approach recognizes that health is affected by social, economic, cultural and other factors as well. A person cannot be healthy if he has no means of consulting a health professional, no money to buy medicines when he is sick, no source of nutritious food, no source of safe drinking water, and no access to education.

The PHC Approach emphasizes that health care must be within the reach of all members of the community. It must be affordable, scientifically sound, and also acceptable to people's beliefs and culture. The community must be able to sustain it through the years; it must not be just a one time activity. This approach is important because PHC is the first level of contact of the individual, family, and community with the national health care system, whether it is given by the village health worker, rural health unit nurse, municipal hospital doctor or traditional healer (hilot).

The services or intervention in PHC are most likely to be effective if:

- It responds to health needs that were expressed and prioritized by the community members themselves.
- The health intervention given was understood, accepted, and agreed upon by the community.
- It is applied by health workers at a cost the community and the country can afford.
- Health workers reside in the community they serve and are properly trained socially and technically to respond to the health needs.

The PHC strategy is appropriate for the Philippine setting since the Philippine government devolved management and delivery of health services from the Department of Health to local provincial, city, and municipal governments in 1992. This means that the local government decides on how much budget to appropriate for health, where to invest money (e.g. building a hospital versus buying medicine supplies), which DOH national programs to implement, and how to implement these programs.

The choice of PHC as a strategy requires the involvement of community members, local health workers, and health professionals in order that government leaders and decision-makers could use local resources more efficiently and effectively. There is better planning, management, and inter-sectoral cooperation to provide essential health services. These services are community-based, accessible and sustainable at a cost that the community and government can afford through community participation and active involvement. Ultimately, it aims to develop self-reliant people, capable of

achieving an acceptable level of health and well-being.

Important features of the PHC concept:

- Community-based with full participation and involvement of the people
- Related to socio-economic development of local community
- Geared towards self-reliance in attaining an adequate level of health
- Essential health care services must be made Available to all communities, Accessible, Appropriate (scientifically sound), and Acceptable (culturally acceptable) to the people and Affordable at the community level

Eight essential elements of the PHC as defined in the Declaration of Alma Ata [see appendix 2]:

- Education on prevailing health problems and the methods of preventing and controlling them
- Promotion of adequate food supply and proper nutrition
- Basic sanitation and promotion of an adequate supply of safe water
- Maternal and child care, including family planning
- Immunization against major infectious diseases
- Prevention and control of locally endemic diseases
- Appropriate treatment of common diseases and injuries
- Provision of essential drugs

Community participation

World Health Organization Healthy Cities publication defines community participation as the process by which people become actively and genuinely involved in defining issues of concern to them, making decisions about factors that affect their lives, formulating and implementing policies, planning, developing and delivering services and taking actions to achieve change.

This suggests that the community must be involved in all stages of the planning, implementation, monitoring and evaluation process regarding issues that affect their lives. It also suggests that community participation is closely linked to the process of empowerment, whereby people gain confidence, self-esteem, understanding, and power to take increased control over their lives.

The active participation of local communities is essential in dealing with community health problems. Community involvement in community health programs enhances the success and sustainability of the activities. It also increases the communities' support for these programs. When the values of the local officials, community members, people's organizations and non-governmental organizations are considered at an early phase, lo-

cal conflicts (e.g. controversial development projects) can be prevented or minimized. Once a local community has a good system of participation and organization, the benefits of such a system easily applies not only to health, but to other social services such as education, livelihood and disaster management.

COMMUNITY HEALTH CARE DELIVERY

Health care is provided to communities by a variety of discrete and often independently functioning health services. Some of these services are located in the community to which they deliver care, while others are not. The health of a community in an urban neighborhood or rural village may be considerably influenced by public health and hospital services that may or may not necessarily be located or focused specifically on it.

Community harmony

Community harmony starts within the home – where the parents within the home are able to demonstrate how they communicate respectfully to each other and with their children. This sets the foundation of how these children will interact with each other, their peers and the adults in their lives.

Community organizations

Community organizations are nonprofit organizations that operate within a single local community. These are run on a voluntary basis and are self-funding. Even within community organizations there are many variations in terms of size and the way they are organized. The importance of community organizations is that they serve as a venue through which people can voice out their needs and present a solid united front in issues concerning them. Examples of community organizations: women’s organizations, Sangguniang Kabataan, credit or multi-purpose cooperatives, farmers’ organizations, faith-based organizations.

The Primary Health Care Team

It is important for members of the community to know the Primary Health Care Team and their respective roles and responsibilities so that they would know who to turn to for their health care needs.

Rural Health Physician

A Rural Health Physician is a primary medical care provider, public health manager, health educator, and team leader of the Primary Health Care Team. As a primary medical care provider, s/he sees patients in the Rural Health Unit and refers patients needing hospitalization or specialist care. S/he also trains community health workers to assess and attend to simple outpatient medical cases in the community. As a public health manager, the

physician leads the health surveys of town and barrios to determine health conditions of inhabitants, and gives feedback to the municipal health office. S/He acts as a program coordinator and assists the Municipal Health Officer in preparing health plans of the national health programs to be implemented. During times of outbreaks or epidemics, the physician gathers and analyzes baseline data, reports to and coordinates with the Municipal Health Office for proper health interventions. As an educator, s/he gives lectures on disease treatment and prevention, immunization, family planning, and other health topics. S/he also trains community health workers to be educators themselves.

Dentist

The dentist performs dental examinations and administers treatment such as medication, tooth extractions, and tooth fillings to patients. S/He also educates patients regarding proper dental hygiene and care.

Nurse

The Public Health Nurse renders nursing services in the primary care setting. S/He administers medicines and performs other nursing work. S/He plays a great role as an educator on health issues and participates in planning different health programs. S/He also prepares weekly, monthly and annual reports for the Municipal Health Office.

Midwife

The Rural Health Midwife assists women during the prenatal period, during labor and after birth. S/He gives prenatal care (immunizations, vitamins, etc.) and advice to women during and after pregnancy. S/He handles normal deliveries and refers complicated cases to the obstetric physician. Post-delivery, the midwife examines patients and their newborn and administers immunizations. S/He also gives health counselling and educates patients on childcare, feeding and family planning. In the absence of a doctor or nurse in a community, the midwife may carry out medical and nursing functions in the field as a first level worker in the PHC Program. The midwife also assists the nurse in preparing reports and supervises community health workers.

Barangay/ Community Health Worker

Community Health Workers are members of the community trained to give primary health care in the communities where they live. They serve as partners of the rural health professionals in ensuring availability of basic health services in far-flung, inaccessible and underserved areas. They are trained to assess patients, administer first aid and basic health services (e.g. blood pressure monitoring, oral rehydration therapy, etc.) and refer complicated medical cases to health professionals. They are health educators, public health surveyors and health program implementors.

Traditional medical practitioners and birth attendants

Traditional health practitioners are found in most societies and are part of the local community and culture. They are respected members of the community and exert considerable influence on local health practices. In the Philippines, they may be called *albularyo*, *hilot sa panganganak*, *hilot sa pilay*, *mantatawas* and many other names, depending on the cultural group. With the support of the formal health system, these indigenous practitioners can become important allies in organizing efforts to improve the health of the community. Some communities select them as Community Health Workers. It is therefore important to explore the possibilities of engaging them in primary health care.

Allied health providers

Rural Sanitary Inspector

The Sanitary Inspector renders sanitation services in the community such as inspection of establishments, sampling of water supplies, investigation of outbreaks of communicable diseases, reporting to authorities concerned and provision of sanitary measures to prevent the spread of diseases. This includes insect and vermin control such as fogging and spraying operations. S/He conducts training of food operators and food handlers, and conducts information and education campaigns on proper sanitation and cleanliness. S/He issues sanitary permits and health certificates.

Medical Technologist

The Medical Technologist performs different chemical, microscopic and bacteriological tests to obtain data for use in the diagnosis and treatment of diseases. S/he keeps a record of laboratory tests results and prepares reports for consolidation.

Dietary nutritionist

The nutritionist collects and evaluates data on the children's state of nutrition, pregnant and lactating mothers in the community. S/he maintains health records to determine weight and height gain and nutritional progress, develops ways to overcome nutritional deficiencies, and refers special cases of malnutrition to physicians or specialists. The nutritionist educates mothers on nutrition, food selection and preparation, food storage and preservation, hygiene sanitation, and maternal and child care. S/he provides nutritional guidelines and prepares plans for nutrition programs. The nutritionist coordinates with other agencies for better food production and better nutrition. S/he monitors the activities and reports of the Barangay Nutrition Scholar in their respective areas.

Barangay Nutrition Scholar

The Barangay Nutrition Scholar is responsible for delivering nutrition services and other related activities such as backyard food production and

environmental sanitation to the barangay.

Local government unit representative

Barangay Kagawad for Health (Local Health Councilor)

The Health Councilor is a member of the Barangay Council and is elected by the community during elections. S/he acts as head of the local health committee and is responsible for health projects and programs that are implemented by the barangay council.

Health center services

A health care system provides preventive, promotive, curative, and rehabilitative health care. Public health programs are usually delivered at the primary care level such as rural health units, health centers, and private clinics. The health services rendered and programs implemented depend on the Local Government Unit because of the devolution of health care mentioned previously. Some health services may be available in some health centers but not in all, depending on local government support for health services.

1. Maternal health care

Pre-natal

- ❑ Check-ups and consultations
- ❑ Simple laboratory exams (urine, sugar, CBC)
- ❑ Tetanus toxoid immunization
- ❑ Provision of iron tablets and low-dose Vitamin A capsules

- ❑ Refers high-risk cases for secondary or tertiary care
- ❑ Counselling for breastfeeding

Natal

- ❑ Delivery at home by midwives and trained birth attendants
- ❑ Delivery (free) at any of lying-in clinic

Post-natal

- ❑ Post partum consultation and check-ups
- ❑ Health education, counseling and information/education campaign
- ❑ Provision of Vitamin A capsules and iron tablets
- ❑ Counselling for family planning

2. Child health care – also includes skilled birth attendance, care of the newborn, prevention of injuries, dental care

Immunizations

- ❑ Against TB, diphtheria, pertussis, tetanus, polio, hepatitis B, measles

Control of diarrheal diseases

- ❑ Free oral rehydrating solutions (oresol)
- ❑ Detection and management of diarrheal diseases
- ❑ Referrals, if necessary

Control of acute respiratory infection

- ❑ Detection and management of upper respiratory tract infections

- ❑ Provision of Cotrimoxazole and Amoxicillin for pneumonia cases
- ❑ Referrals to tertiary hospitals, if necessary

Growth monitoring and promotion (Under-Five Clinic)

- ❑ Provision of growth charts
- ❑ Monthly reweighing
- ❑ Masterlisting, weighing and monitoring of children below five years old

Integrated management of childhood illnesses

- ❑ Referrals of other childhood illnesses for secondary or tertiary care

Promotion of breastfeeding

- ❑ Intensified information and education campaign on exclusive breastfeeding, from birth up to six months of age
- ❑ Initiation of breastfeeding immediately after birth
- ❑ Breastfeed up to two years, and even beyond

3. Nutrition program

Operation Timbang

- ❑ Mass weighing of children 0-72 months old
- ❑ Identification of malnourished children
- ❑ Prioritization of below normal malnourished children for food supplementation

Food supplementation

- ❑ Deworming malnourished children before feeding
- ❑ Monthly reweighing of

identified malnourished children

- ❑ Food assistance
- ❑ Mothercraft nutrition and low-cost food cooking classes

Micronutrient supplementation

- ❑ Provision of Vitamin A capsules to all pre-schoolers every six months
- ❑ Provision of iron supplements to infants who are below normal for weight-for-age, and short for height-for-age

Nutrition education and income generating and livelihood projects

- ❑ Provision of seed capital for IGP to all qualified families with malnourished pre-schoolers (in coordination with NGOs)
- ❑ Technical skills training to families with malnourished pre-schoolers.
- ❑ Nutrition Education and Information Campaigns
- ❑ Nutrition classes
- ❑ Cooking demonstration of low-cost nutritious menus
- ❑ Campaign for food fortification with Vitamins A, C and beta-carotene by manufacturers
- ❑ Promotion of use of iodized salt in households and by food establishments
- ❑ Ensure availability of iodized salt in markets, groceries and small neighborhood wet markets
- ❑ Diet counseling for diabetic and other therapeutic cases

4. **Population and family planning program**

- ❑ Provision of free oral and injectable contraceptives to acceptors
- ❑ Free IUD insertion in the health centers
- ❑ Provision of information and education materials
- ❑ Free family planning, responsible parenthood and safe motherhood counseling in all health centers

5. **Control of communicable diseases**

Tuberculosis control program

- ❑ Free sputum microscopy for all TB symptomatics to identify patients positive for Tb bacilli
- ❑ Provision of multiple Tb drug regimen - short course chemotherapy for sputum positive cases as well as those with positive chest x-ray findings
- ❑ Use of DOTS (Directly Observed Treatment Strategy) to ensure patient's compliance in the taking of anti-Tb drugs

Leprosy Control Program

- ❑ Counselling and information and education campaign

6. **Environmental sanitation program**

- ❑ Inspection of food establishments and amusement places
- ❑ Containment/elimination of noise, foul odors, smoke

- ❑ Containment/elimination of insect and rodent breeding grounds
- ❑ Inspection of households to determine status of those with safe water supply and sanitary waste disposal
- ❑ Provision of free toilet bowls to marginalized families in the barangays
- ❑ Campaign for a clean and safe environment
- ❑ Provision of free PHC and Bacti bottles to determine potability of water supply
- ❑ Free STI prevention seminar, conduct laboratory exam (sputum and stool) as requirement for issuance of health certificates.
- ❑ Free lectures to food service workers and street food vendors to ensure clean and safe food for retail

7. **Control of non-communicable diseases**

Cardiovascular prevention and control, hypertension and cerebrovascular accidents

- ❑ Blood pressure screening in all health centers and within the community
- ❑ Free anti-hypertensive drugs and other cardio medicines for the identified cases
- ❑ Information and education campaigns and lectures for physical fitness and healthy lifestyle towards a healthy heart
- ❑ Free cholesterol determination/ ECG in selected health centers in coordination with other agencies

Cancer Control Program

- ☐ Cancer of the breast
- ☐ Cancer of the cervix
- ☐ Cancer of the lungs
- ☐ Prostatic cancer
- ☐ Regular breast examination for early detection of breast cancer
- ☐ Pap smearing for women at all health centers
- ☐ Information and education campaign for early diagnosis and treatment
- ☐ Referral of suspected cases to hospitals/medical centers for diagnostic procedures and tertiary care
- ☐ Coordination with other related agencies and hospitals for diagnostic procedures such as direct rectal exam and chest X-ray

Diabetes Prevention and Control Program

- ☐ Screening on fasting blood sugar to identify diabetic patients
- ☐ Diet counseling and prescription for diabetic patients
- ☐ Information and education campaigns on healthy diets and lifestyle including exercise and physical fitness

8. **Dental health care program**

- ☐ Free oral examination and prophylaxis
- ☐ Fluoride application among school children
- ☐ Pit and fissure sealant application
- ☐ Tooth extraction
- ☐ Temporary and permanent filling

- ☐ Gum treatment
- ☐ IEC campaign for oral health
- ☐ Oral health promotion

9. **Reproductive health care**

- ☐ Free diagnosis and management of illness - reproductive tract infections and other related diseases
- ☐ Provision of free medicines
- ☐ Laboratory exam—urinalysis, CBC, gram staining of vaginal smear, pap smear
- ☐ Referral for tertiary care
- ☐ Information and education campaign activities
- ☐ Counselling on family planning and reproductive health

10. **Medical morbidity clinic**

- ☐ Free consultation and management of patients/clients at the health centers, mobile and during outreach clinics
- ☐ Provision of free medicines for treatment of cases
- ☐ Referral for laboratory exams and for further management in hospitals
- ☐ Counselling and information and education campaigns
- ☐ Conduct outreach clinics in special circumstances, activities and outbreaks

11. **National Voluntary Blood Services Program**

- ☐ Recruitment/advocacy campaign for blood donors
- ☐ Blood-letting activities at the barangay level

12. **Epidemiology and surveillance program**

- ❑ Case investigation and surveillance in outbreaks
- ❑ Prepare and submit recommendation to contain epidemics
- ❑ Institute measures to control outbreak

13. **Disaster Management Preparedness Program**

- ❑ Medical services/assistance during disasters
- ❑ Emergency management of cases encountered
- ❑ Referral for immediate care and management
- ❑ Prepare plans and activities to prevent future disasters

14. **Mental hygiene**

- ❑ Attends to clients who are emotionally and psychologically disturbed
- ❑ Intervention centers for drug and alcohol dependents
- ❑ Adolescent counselling centers

15. **Pharmacy services**

- ❑ Fill-in prescription medicines to target/clients
- ❑ Distribute medicines to all health centers for use of their parents
- ❑ Inventory of medicines in all health centers
- ❑ Provide information and education campaigns on herbal medicines to replace prescription drugs

COMMUNITY HEALTH PROMOTION AND COMMUNITY HEALTH EDUCATION

Health promotion is the social action dimension of health development. Health promotion and social action for health support the health-for-all goal in two ways: 1) by promoting healthy lifestyles and community action for health, and 2) by creating conditions that make it possible to live a healthy life.

The first entails empowering people with knowledge, attitudes and skills needed for healthy living. The second calls for influencing policy-makers so that policies and programs support health. Strong social support for health action needs to be initiated, accelerated and maintained. A public that knows its rights and responsibilities, supported by political will and awareness at all levels of government, can make health for all a reality.

Health promotion can be described as social education and political action that enhances public awareness of health, and fosters healthy lifestyles and community action in support of health. It empowers people to exercise their rights and responsibilities in shaping environments, systems and policies that are conducive to health and well-being. Health promotion is carried out through acts of advocacy and building of social support systems that enable people to make healthy choices and live healthy lives.

Health education is based on the assumption that beneficial health

behaviors result from a combination of planned, consistent and integrated learning opportunities. Community health education is a theory-driven process that promotes health and prevents disease within population.

The collective health behaviors, attitudes,, beliefs and practices of everyone who lives in the community affect the community's health. Health education at present is conceived as any combination of learning experiences that influence behavior conducive to health.

COMMUNITY FOOD GARDENS AND FOOD PRODUCTION

Community gardening meets varying needs of diverse communities, especially those in marginalized neighborhoods struggling with hunger and poverty. Many gardens—particularly those in underserved areas—begin to address lack of access to fresh produce, making the gardens a critical piece of the community's food security.

Community gardening can also be a unique and valuable way for immigrants from rural areas to maintain their culture. A community garden allows people to grow crops they may not be able to find elsewhere. For immigrants, this means being able to maintain a traditional diet, be healthier and happier.

Community gardeners use land shared among several households. Community gardeners generally grow produce to eat at home or to share. Some community gardens, often in urban areas, move into growing for commercial use. The difference between a community garden and urban agriculture defines the latter as gardens or farms planted for the purpose of selling the produce. Commercial urban farms can expand production with aquaculture, hydroponics and greenhouses. These may also partner with a commercial kitchen to create locally-produced value-added products such as jams and sauces.

Community gardening stimulates social interaction, encourages self-reliance, beautifies neighborhoods, produces nutritious foods, and reduces family food budgets. Each garden is an autonomous neighborhood- based effort where friends share work and responsibility. Community gardening brings neighbors together and empowers people to supplement their food supply by growing it themselves.

COMMUNITY DISASTER PREPAREDNESS

The Philippines, being in the so-called Circum-Pacific Belt of Fire and typhoon, has always been subjected to constant disasters and calamities.

Floods, typhoons, earthquakes, volcanic eruptions, drought and human-induced disasters such as armed conflict, oil spills, epidemics have always been present. Climate change due to global warming further compounds the problem i.e. when it should be cold and dry during the months of December to February, the country still experiences typhoons. Extremes of seasons and increase in frequency of severe thunderstorms that produce flooding and damaging winds are just some examples of the disastrous effects of global warming.

The primary objective of community disaster management is to ensure effective and efficient implementation of a civil protection program through an integrated, multi-sectoral, and community-based approach for the protection and preservation of life, property and environment, and the prevention of excess mortality and morbidity.

This program embraces all conceivable contingencies and makes use of all available resources, both government and private. It also develops self reliance by promoting and encouraging the spirit of self-help and mutual assistance among the local officials and their constituents. While emergency preparedness is a joint responsibility of the national and local governments, its effectiveness will depend largely on the skills, resources, and involvement of private organizations and the general public in the area of disasters. Regular exercises and drills will be conducted at all levels to enhance the people's reaction capability and ensure precision and spontaneity in responding to emergencies.

The National Disaster Coordinating Council is mandated to strengthen the Philippine disaster control capability and establish a community disaster preparedness program nationwide.

The different levels of Coordinating Council are the Regional Disaster Coordinating Council, Provincial Disaster Coordinating Council, City Disaster Coordinating Council, Municipal Disaster Coordinating Council and the Barangay Disaster Coordinating Council. Each level is established to complement the National Disaster Coordinating Council. Currently there is the cluster approach for health, nutrition, education, WASH (water, sanitation and hygiene promotion), camp management, logistics, food, etc. should know minimum standards during disasters, which is also known as the Sphere standards.

PROTECTING THE COMMUNITY FROM POLLUTION

A clean and safe environment is an important part of community health. Smoke and harmful chemicals from factories and motor vehicles cause respiratory problems like asthma, emphysema, and lung cancer. Toxic chemicals

like mercury accumulating in fish cause damage to the brain and nervous system especially in children and unborn babies. Improper waste disposal leads to outbreaks of cholera and other water-borne diseases. In the long run, it is more costly for a community to treat rather than prevent disease. In some cases, the damage caused by a disease can be permanent or fatal. Thus, protecting the health of a community involves protecting the environment from pollution.

Children must be taught how pollution affects people's lives. A certain consciousness about protecting the environment must be ingrained in them early on. After all, they are inheriting this environment. Because the older generation may not have done much to protect this environment, the next generation must double its efforts to care for it.

WATER POLLUTION AND SANITATION

Water can be contaminated at its source. In areas where rivers, spring water or wells are the source of water, contamination can easily happen if they are polluted with human and animal wastes. Normally, river beds and spring waters and deep wells have natural filters, that is, water pass through several layers of silt, sand and gravel where dirt and microorganisms are filtered through. This process assures that the water is as pure as it should be. Water companies provide cities with filtered and chemically-treated water through a pipe system. Contamination will occur if there is a leak or damage in the pipe system, where soil could get through. Water can also be infected in storage. Containers that are dirty or left uncovered can easily collect bacteria and parasites that can multiply and cause illness. If the contaminated water is the main source for drinking or washing food in a community, then there could be an outbreak of illness.

Community water supply

A community water supply system must serve more than the bare minimum needs of safe water for drinking and culinary purposes. For health, comfort, and convenience, additional quantities for bathing, washing and public cleansing are necessary. The ultimate goal is the provision of safe water of accessible quality and adequate quantity, for home use and for public, industrial and recreational uses.

Attention must be paid to a number of activities:

Source selection and water-use allocation. Ever increasing demands on finite water resources compel the re-use of treated waste waters in some places. The best quality water should be reserved for human consumption. Drinking water source should be 25 meters from toilets, areas of washing and bathing, radioactive materials and other possible pollutants.

Treatment. Water should be clear, odorless, tasteless and colorless. Turbidity is generally removed by coagulation and flocculation and by settling suspended matter with the aid of aluminum sulfate (Alum) or ferric chloride. Filtration through sand is an economical treatment process for the removal of residual turbidity and biological contaminants. Slow sand filtration and infiltration galleries are more suited to rural areas than rapid sand filtration. Treatment with chemicals, other than simple chlorination, is not practical in rural areas especially in developing countries like the Philippines.

Disinfection. Iodine, bromine, ozone, ultra-violet rays and boiling have been used for disinfection. Chlorine is the most widely used disinfectant for community water supplies by virtue of its germicidal properties, comparatively low cost, and ease of application.

Distribution. Conveyance of water under pressure by pipes is the most economical and safe method of transporting water from source or treatment plant to consumer. The handling of water after treatment and disinfection poses a fresh threat of contamination. It is for this reason that the supply of safe piped water to each house through house connections is the ultimate public health objective. However, the supply of safe water through public standposts or by sanitary wells has to be accepted as an initial measure for economic reasons.

Types of water distribution

- ❑ *Level I (point source)*- a protected well or a developed spring with an outlet but without a distribution system; generally adaptable for rural areas where the houses are thinly scattered. A Level I facility normally serves an average of 15 households.
- ❑ *Level II (Communal faucet system or standpost)* - a system composed of a source, a reservoir, a piped distribution network and communal faucets. It is generally suited for rural and urban fringe areas where houses are clustered densely to justify a simple piped system. Usually, one faucet serves four to six households. [see Figure 18]
- ❑ *Level III (Waterworks system or individual house connection)* - a system with a source, a reservoir, a piped distribution network and household taps. It is generally suited for densely populated urban areas, serves more than 25 households and may have a treatment system.

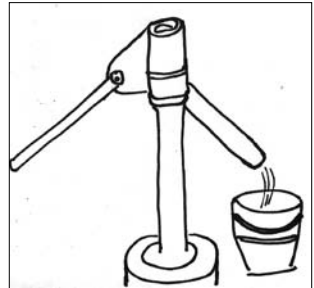


Fig. 18 Standpost

Drinking water supply standards

Standards for drinking water and the bacteriological and chemical examinations, together with the evaluation of results, shall conform to the criteria

set by the National Drinking Water Standards. The treatment of water to render it safe for drinking, and the disinfection of contaminated water sources together with their distribution systems shall be in accordance with procedures prescribed by the Department of Health.

- a. *Initial examination.* The physical, chemical and bacteriological examinations of water from newly constructed water systems or sources are required before it can start operation and be opened for public use. Examination of water for possible radioactive contamination should also be done initially.
- b. *Periodic examination.* Water from existing sources is subject to bacteriological examination as often as possible but the interval shall not be longer than six months. The general systematic chemical examination shall be conducted every 12 months or more often. Examination of water sources should be conducted yearly for possible radioactive contamination.

LAND POLLUTION AND SANITATION

The waste disposal system and sanitation technologies used to protect public health and the environment depend both on the local setting (e.g. rural or urban, coastal or upland) and the existing environmental conditions. This setting is influenced by population densities and ability of the environment to absorb pollution stress.

The most frequent method of disposal of waste from inland is in a body of water. Dumping wastes into streams or lakes has harmful environmental and health impacts. Pollution of water supplies and subsequent pollution of food products such as fish, clams, oysters, shrimp leads to widespread diarrhea and other water-borne diseases. As such, proper human and solid waste disposal is needed to safeguard human health, reduce bad odors, reduce the fouling of streams and other water systems, and become more economically sound as a result of the recycling.

Human waste and waste-water disposal

Human waste is the principal vehicle for transmission and spread of a wide range of communicable diseases. Feces not only are malodorous, but contain an array of pathogenic viruses, bacteria, cysts of protozoa and eggs of helminthes (the collective term for worms parasitic to man) that may cause disease in a new host.

Sewage is defined as a combination of (a) liquid wastes conducted away from residences, business buildings and institutions (b) liquid wastes from industrial establishments (c) ground, surface and storm water that may find

its way into the sewers.

Prevention of infections of fecal origin is the most important objective of a human waste management system. Human excreta and waste water should be disposed to avoid direct or indirect contact with man. Essential requirements include: (a) absence of contamination of soil, of groundwater, or of surface water (b) excreta should not be accessible to flies or animals (c) absence of odors or unsightly conditions.

In rural areas the simplest arrangement for safe disposal of human waste is a type of privy or chemical toilet. The sanitary pit privy, the aqua privy, and the waterseal latrine are three types of installation that, when properly designed and maintained, fulfills the essential sanitary requirements. If running water supply is available, household cesspools or septic tanks are commonly used.

In towns and cities, a community sewage system is generally employed. A water-borne system of excreta collection and disposal is the most satisfactory method of sanitation. A waste-water system comprises a network of facilities and services such as: (a) household sanitary toilets and plumbing; (b) a network of main and trunk sewers for the collection and transportation of waste water; (c) treatment facilities for removing the waste water transported by the water, (d) outfall or disposal facility for discharging the treated waste water into receiving bodies of water.

Disposal of solid waste

Solid waste includes discarded solid materials from homes and commercial, industrial, and agricultural operations. Solid waste refers to all discarded household, commercial, and industrial wastes, as well as sweepings, construction debris and agricultural waste. Solid waste is composed of the following:

- Compostable
- Recyclables
- Non-recyclable and non-compostable
- Special wastes – household hazardous waste i.e. syringes, body fluids

Unsanitary collection and disposal of solid wastes creates serious health hazards (e.g., by encouraging the breeding of flies mosquitoes, rodents and other vectors of disease). It contributes to water pollution, air pollution, and soil pollution. It has adverse effects on land values, constitutes a public nuisance, and contributes to the deterioration of the environment. Appropriate solid waste disposal system includes rapid removal of refuse from premises by an efficient collection system and proper processing of refuse before final disposal or re-use.

A refuse disposal system includes: (1) transportation system using automotive vehicles, railway transport, pneumatic transport in pipelines under vacuum, and liquid transport to another (e.g. truck hauling to railway hauling) (2) facilities for the processing of solid wastes, such as segregation, incineration, composting, pulverization, compaction and grinding (3) facilities for sanitary discharge into bodies of water and discharge into the air of combustion gases and particulate matter.

There are numerous alternatives for the handling and disposal of solid wastes. The solid waste of a municipality may consist of garbage, rubbish, incinerator residue, dead animals, business wastes, demolition materials, street sweepings and abandoned automobiles. In selecting the best system, protection of the health of the community and prevention of public nuisances must first be considered. How to salvage refuse components such as paper, glass and steel for re-use by the industry is also given thought. Table 17 also outlines proper disposal of different kinds of waste.

Zero Waste Management

“Zero Waste” is an approach that seeks to maximize recycling, minimize waste, and ensure that products are made to be reused, repaired or recycled back into nature or the marketplace.

Opting for zero waste means forgoing the entire concept of “waste.” Zero waste works from the belief that there is nothing considered as waste. Resources used in creating a product are usually designed for time-bound use. After a while, the product becomes useless and ends up as waste. Both the product itself and the process of production generate waste. Zero waste provides facilities like resource recovery, composting and waste to wealth ideas to tackle the waste generated.

The pile of trash produced throws up a range of raw materials for new products, exciting financial opportunities and better jobs. For example, used rubber tires are ground and treated to be used as insulation material or asphalt component instead of being dumped in landfills or burned. Walking the zero waste way has considerable savings on water, energy, resources and landfill space thus making it an optimum environmental and sustainable option.

Proper and safe waste disposal is discussed in *Chapter 11 Environmental Health*.

Community recycling

Most community recycling programs appeal to citizens interested in a clean environment and in people’s desire to contribute to the betterment of their community. Most people believe that recycling is a good idea but not every-

Table 17. Refuse materials by kind, composition and sources

Kind	Composition	Sources
Garbage	Waste from preparation, cooking and serving of food, market wastes, wastes from handling, storage and sale of produce.	Households, restaurants, institutions, stores, markets
Rubbish	Combustible: paper, cartons, boxes barrels, wood, excelsior, tree branches, yard trimmings, wood furniture, bedding, dunnage Noncombustible: metals, tin cans, metal furniture, dirt, glass, crockery, minerals	Same as garbage
Ashes	Residue from fires used for cooking and heating and from on-site incineration	Same as garbage
Street Refuse	Sweepings, dirt, leaves, catch-basin dirt, contents of litter receptacles	Streets, sidewalks, alleys, vacant lots
Dead Animals	Cats, dogs, horses, cows	Same as street refuse
Abandoned Vehicles	Unwanted cars and truck left on public property	Same as street refuse
Industrial wastes	Food-processing wastes, boiler house cinders, lumber scraps, metal scraps, shavings	Factories, power plants
Demolition wastes	Lumber, pipes, brick, masonry, and other construction materials from razed buildings and other structures	Demolition sites to be used for new buildings, renewal projects, expressways
Construction wastes	Scrap lumber, pipe, other construction materials	New construction, remodeling
Special wastes	Hazardous solids and liquids: explosives, pathological wastes, radioactive materials, batteries	Households, hotels, hospitals, institutions, stores, industry
Sewage treatment residue	Solid from coarse screening and from grit chambers; septic-tank sludge	Sewage treatment plants, septic tanks

one willingly recycles. People must be motivated to overcome their objections or inertia until recycling becomes a habit.

These are some of the recycling concepts:

- *Recycling saves energy.* It takes less energy to make products from recycled materials than from virgin materials.
- *Recycling conserves natural resources.* By reusing resources, we can conserve nonrenewable resources.
- *Recycling protects the environment.* By reducing the amount of waste needing disposal, recycling saves land and reduces the potential for air and water pollution.
- *Recycling has economic benefits.* Recycling reclaims valuable materials and returns them to commerce. Jobs are created and money is returned to the economy for materials that would otherwise end up at a disposal facility.

Involving all the interested and affected parties within the community in the recycling planning process will both help build a good recycling plan and build community support. Public education and an aggressive recycling promotion effort will be needed to gain public support and participation. The promotion effort should be planned as carefully as the collection and processing components of the recycling program. Promotion activities should include clear information about the recycling program, reasons for recycling and information about buying recycled-content products.

NOISE AND SOUND LEVELS IN THE COMMUNITY

Noise is unwanted or undesirable sound. It is typically characterized by intensity, frequency, periodicity (continuous or intermittent) and duration of sound. According to WHO, environmental/community noise is defined as noise emitted from all sources except the industrial workplace.

Main outdoor noise sources include automobiles, rail and air traffic, construction sites, public works, and the neighbourhood. Main indoor noise sources are ventilation systems, office machines, home appliances and neighbors. Different people experience noise differently since the perception of annoying or disturbing sounds is subjective. People with medical problems (e.g. high blood pressure), people with existing mental health problems (e.g. depression or anxiety disorders), people in hospitals or rehabilitating at home, people dealing with complex cognitive tasks, people with vision and hearing impairment, babies, young children, and the elderly are more likely to be affected by noise. See Table 18 for the different noise values in the community.

Demonstrated health effects related to noise

Noise can have a negative impact on health and well-being, particularly when sleep is interrupted by noise. Noise can cause hearing impairment, interfere with communication, disturb sleep, cause cardiovascular and psychophysiological effects, reduce performance, and provoke annoyance responses and changes in social behavior according to WHO.

Hearing impairment and speech interference. Sound levels are measured in decibels. Exposure levels above 85 dB for an 8-hour work day cause the ear to tire and hearing is temporarily impaired. After some time, hearing recovery becomes less complete and impairment becomes permanent. Hearing impairment can be noticeable within 6-12 months of starting a job where sound levels are hazardous. Transient tinnitus (ringing in the ear) is a common occupational hearing condition, especially in people exposed to impact noise. It should be considered as a warning of excessive exposure to sound and a trigger for appropriate preventive action.

The main social consequence of hearing impairment is the inability to understand speech. High levels of noise can adversely affect speech intelligibility, especially if a person has an existing hearing impairment. High levels of noise from sources such as busy traffic or noisy appliances can mask the sound of speech, making it difficult to understand. This can be a particular issue for children in the process of learning to speak.

Annoyance. The most common response to noise is annoyance. Annoyance is the expression of negative feelings resulting from interference with activities, as well as disruption of one's peace of mind and the enjoyment of one's environment. Noise can cause different magnitudes of annoyance. Levels of annoyance can be influenced by social, psychological or economic issues.

Table 18. WHO Guideline values for community noise 2001

Environment	Critical health effect	Sound level dB(A)*	Time hours
Outdoor living areas	Annoyance	50 - 55	16
Indoor dwellings	Speech intelligibility	35	16
Bedrooms	Sleep disturbance	30	8
School/classrooms	Disturbance of communication	35	During class
Industrial, commercial and traffic areas	Hearing impairment	70	24
Music through earphones	Hearing impairment	85	1
Ceremonies and entertainment	Hearing impairment	100	4

Sleep disturbance. Sleep disturbance is often related to community noise. Uninterrupted sleep is a prerequisite for good physiological and mental functioning. Sleep disturbance can cause difficulty in falling asleep, awakenings and alterations of sleep stages or depth, cardiovascular effects, changes in respiration and increased body movements.

Mental health. Community noise is not believed to cause mental illness directly, but is assumed to accelerate and intensify the development of latent mental disorders. Exposure to high levels of occupational noise has been associated with development of neurosis, but the findings on community noise and mental health effects are inconclusive. Community noise is more likely to annoy or disturb people with existing mental health problems such as depression or anxiety.

Performance. Noise can adversely affect performance of cognitive tasks in both workers and children. Reading, attention, problem solving and memorization can be significantly affected by noise. Noise is a distraction, an unexpected and loud noise startles a person out of concentration.

Cardiovascular disease. It has been suggested that noise exposure is associated with blood pressure changes and the risk for heart attacks, but epidemiologic evidence is limited. A metaanalysis conducted by the Laboratory of Exposure Assessment and Environmental Epidemiology in the National Institute of Public Health and the Environment in the Netherlands revealed small blood pressure differences associated with noise exposure. Significant association for both occupational noise exposure and air traffic noise exposure and hypertension was also found. In cross-sectional studies, road traffic noise exposure increases the risk of heart attacks.

AIR POLLUTION

Air pollution adds to the large health burden of cardiovascular and respiratory diseases, which are among the leading causes of disease and death in the country. Short-term effects of air pollution include irritation to the eyes, nose, and throat, and infection on the upper respiratory tract such as pneumonia and bronchitis. Air pollution can also worsen asthma and emphysema conditions. Long-term effects of air pollution include development of chronic respiratory disease, lung cancer, heart disease, and even damage to the brain, nerves, liver or kidneys. Continuous exposure to air pollution leads to the aggravation of medical conditions among the elderly and lung problems among growing children. Exposure to polluted air on a daily basis also makes the lungs susceptible to tuberculosis and other respiratory diseases.

The Philippine Clean Air Act (Republic Act No. 8749) signed in June 1999

is a comprehensive air quality management program that aims to achieve and maintain healthy air for all Filipinos.

In line with this, the government implemented several initiatives to improve air quality, such as the use of cleaner fuels, phase-out of two-stroke motorcycles and leaded gasoline, lowering of sulphur content in diesel, and improvement of pedestrian facilities and bikeways to encourage walking and biking. Moreover, the Ecological Solid Waste Management Act of 2000 (Republic Act No. 9003) prohibits open burning of waste which is the chief source of harmful dioxin and furan in the country.

SPECIFIC POLLUTANTS IN FOCUS

The rapid development of science and technology also leads to new pollutants that have hazardous environmental and health effects. Hazardous health effects of pollutants are magnified through the process of bioaccumulation. Bioaccumulation means the concentration of substances, such as pesticides (e.g. DDT), metals (e.g. methylmercury), or other organic chemicals in an organism or part of an organism. The substance may enter an organism through respiration, food and water intake, and skin contact with the substance. These substances are not excreted but are stored in the body and thus increase levels over time. Generally, the more hydrophobic or fat-soluble a substance, the higher is its tendency to bioaccumulate. The bioaccumulation process thus results in a higher concentration of the substance in the body of an organism than what is measured in the surrounding environment. Because of this, the following measures are recommended for pollutant exposure: medical treatment among affected individuals, continual monitoring and health assessment activities, information and education campaigns among small scale miners and community residents, strict enforcements of zoning laws for residential and processing sites, and probation of indiscriminate dumping of mine tailing materials into the water bodies.

Pesticides

Chemical pesticide and fertilizer use has significantly increased in the past decades. Its use has played a central role in improving crop yield as a response to the demand for food by the growing population. Pesticide products in different forms have also been beneficial in and around homes. Mothballs, mosquito coils, pesticides and fertilizers for ornamental plants and lawns, and insecticide sprays are some of the commonly found chemicals in households.

Contamination of food with pesticides can result from direct spraying of the crops and vegetables in the field or after harvest to prevent insect infestation. Pesticide-laden food crops reach the market and eventually the households,

where food quality may further deteriorate depending on the food hygiene practices on cleaning, storage and handling.

Lack of required protective clothing, poor personal hygiene, and use of leaking backpack sprayers put farm workers at great risk of negative health effects during pesticide application. Farm workers also expose their family members when they return home from the field without changing work clothes that are soiled with pesticides. Other people at risk include residents of communities adjacent to farms and plantations, and children who help out in the farm or play near pesticide-contaminated plantations. Selling of empty pesticide containers also puts the public at significant risk of exposure to pesticides, especially when such containers are used for water and food storage.

Health Effects of Pesticides. Adverse effects of pesticide poisoning can be acute, manifesting within minutes to hours, or chronic meaning it manifests after several years of small dose exposures. Adverse effects can include poisoning or intoxication, skin problems, damage to the reproductive system, decreased immune system response, and development of cancer.

Safety tips on use of pesticides. Methods available for the disposal of surplus pesticides and containers are not completely satisfactory for all materials. Methods for pesticide disposal include thermal decomposition, chemical neutralization, burial, and biological or natural degradation.

Although pesticides can be useful around the home and garden, it can also be dangerous if used carelessly or stored improperly. It must be kept out of the reach of children.

- Read label before using any product, and follow directions to the letter, including all precautions and restrictions.
- Before applying pesticides (indoors or outdoors), remove children, toys, and pets from the area.
- Never transfer pesticides to other containers that children may associate with food or drink.
- Always use household products in child resistant packaging and use the packaging properly by closing the container tightly after use.
- When applying insect repellents to children, read all directions first. Do not apply over cuts, wounds or irritated skin. Do not apply to eyes, mouth, hands or directly on the face.
- Put away pesticides immediately after use.
- Always store pesticides where children can't reach them or even see them.
- Teach children how to recognize and stay away from all poisonous materials, whether garden pesticides, household cleaners or prescription drugs.

When using pesticides indoors

- Open several windows and position a fan between the work area and an open door or window, with the fan pointed outward to pull fumes away from the work area.
- Take plenty of fresh-air breaks.
- Don't eat, drink or smoke while using hazardous products.
- Remove or cover food, cooking and eating utensils and pet dishes when using chemicals.
- Keep the container tightly covered when it's not being used to avoid fumes and spills.

Heavy metals

Metals are chemical elements easily found in the natural environment or as a result of human-made activities like mining, smelting, and combustion of fossil fuel among others. Heavy metals may reach the food chain from improper disposal of industrial wastes contaminated with metals into water bodies or use of heavy metal-containing substances to improve agriculture yield that consequently contaminate food crops, among others. Since the metals that accumulate display similar physical or biological properties, its effects on human health may be additive or synergistic. Among the heavy metals, lead, mercury, cadmium, arsenic and aluminum were found to cause the most serious health consequences.

Lead (Pb). Lead comes from leaded gasoline, lead-based paints, lead pipes for water supply systems, leaded pencils, and lead soldered tin cans. Lead may enter the body through inhalation, ingestion, or skin absorption. Lead exposures have been shown to cause damage on the nervous system, kidneys, and bones. In women, it has been associated with miscarriages and premature births. In men, it has been associated with a decrease in sperm production. Several epidemiologic studies correlate lead exposure on intellectual and behavioral impairment of children. Possible lead exposure effects include decline in intelligence quotient levels, poor attention span, decrease in children's school performance, and speech and hearing impairment.

Mercury (Hg). Mercury is found naturally in the earth's crust and is widely distributed in the air. However, it is generally more present in highly polluted areas where mercury has accumulated through industrial or mining activities. Ingestion of contaminated food is the most common form of mercury exposure. The higher the acidity and dissolved organic carbon (DOC) levels of the bodies of water, the more likely it is to enter the food chain, and the higher the mercury levels in fish and other seafood. Methylmercury [CH₃Hg] is the most toxic form of mercury. It affects the immune system, genetic and enzyme systems, and the nervous system, particularly coordination, touch, taste, and sight. Methylmercury is more harmful to developing embryos, which are five to ten times more sensitive than adults. Mercury

from broken thermometers, or elemental mercury, causes tremors, gingivitis, and excitability when vapors are inhaled over a long period of time.

Cadmium (Cd). Cadmium is a rare, silver white metal that occurs naturally in the earth's crust. It is commonly found in soil that contains deposits of zinc, lead and copper ores. Although cadmium does not bioaccumulate in aquatic and terrestrial food chain, it is very toxic to plants, animals and humans. Cadmium may enter the body through ingestion of food contaminated with cadmium-containing pesticides or irrigated water. Drinking of contaminated water and inhalation of airborne cadmium particles produced from incineration and tobacco smoke are other routes of exposure. Accumulation of cadmium causes kidney damage and impairs absorption of calcium, an essential mineral needed for stronger bones. Loss of calcium from the body subsequently leads to bone disease. Exposure to cadmium for a short period of time may immediately result in vomiting, choking, abdominal pain, diarrhea and headache.

Arsenic (Ar). Arsenic is widely distributed in nature. Generally, human exposure to arsenic compounds may result from ingestion of food contaminated with inorganic or organic arsenic compounds. Acute exposure to arsenic compounds include nausea, vomiting, diarrhea, abdominal pain and dizziness, usually manifested within 1-2 weeks after exposure. Ultimately, it may also lead to death as a result of serious damage to kidneys, liver and heart. Long term effects may involve multiple organ systems and may also cause skin problems.

Aluminum (Al). Aluminum is one of the most abundant metals in nature, accounting for about 75 percent of the earth's crust. Ingestion of aluminium contaminated food or water is the major route of human exposure to this metal. Following exposures, some of the changes include deterioration of mental performance, behavior changes, loss of short-term memory, poor long-term memory among elderly persons, and impairment of visual and motor coordination.

Persistent organic pollutants

Persistent Organic Pollutants are toxic chemicals from pesticides or waste products of industrial activities. POPs are highly stable compounds that can last for years or decades before breaking down. These chemicals exhibit a process known as the "grasshopper effect." POPs released in one part of the world can, through a repeated process of evaporation and deposit, be transported through the atmosphere to regions far away from the original source. Moreover, POPs exhibit bioaccumulation. POPs are readily absorbed in fatty tissue, where concentrations can become magnified by up to 70,000 times the background levels. Fish, predatory birds, mammals and humans, being high up the food chain, also absorb the greatest concentrations. When

these organisms travel, the POPs travel with them. As a result of these unique characteristics, POPs have now become a global problem.

Health effects of persistent organic pollutants

- Death, disease, and birth defects among humans and animals.
- Cancer
- Allergies and hypersensitivity
- Damage to the central and peripheral nervous systems
- Reproductive disorders
- Disruption of the immune system
- Disruption of endocrine system
- Developmental defects

OIL POLLUTION

Increased transport and use of oil has brought about oil pollution. Oil pollution of the marine environment can come from accidental or deliberate operational discharges and spills of oil from ships, offshore platforms and pipelines, oil extraction activities, and seepage of oil from natural sources. The effect of oil pollution can be disastrous for many ecosystems. Birds, fish, and sea mammals often do die due to damage to the protective layer of fur, feathers, or fins; toxic effects on lungs, liver, central nervous system; and reduction of the animal's ability to eat due to damage in the intestinal tract. For humans, oil pollution means damage to fish and aquaculture industries, tourism and recreation industries, and polluted sources of clean water.

Various methods are available to constrain the spread of an oil spill and disperse the oil. These include burning the oil, using high capacity pumps to draw off the surface oil, and use of adhesion collectors (i.e., mechanical devices that scrape the oil up from the surface of the water), sinking agents (e.g. carbo-sand to settle the oil on the sea bed), emulsifiers, and dispersants to break the oil into droplets to increase its surface area and aid bacterial degradation of the oil. Biological agents can also be used to clear the oil spills.

RADIATION

Non-ionizing radiation includes all forms of radiation that do not involve production of ion-pairs with the matter it interacts with and passes through. Examples include high-frequency radiation in communications and broadcasting; microwave radiation used in radar, television transmissions and industrial applications, infrared radiation used in heat lamps, visible light used in some lasers, and UV radiation used in germicidal and "black" lights. Although these products offer certain benefits to the public, these

may also create potential hazards to health through uncontrolled or excessive radiation emissions.

On mobile phone use

Mobile telephones are now an integral part of modern telecommunications. Given the immense numbers of users of mobile phones, even small adverse effects on health could have major public health implications. Mobile phone handsets and base stations present quite different exposure situations. Though exposure of a user of a mobile phone is far greater than a person living near a cellular base station, the mobile handset transmits RF energy only while a call is being made whereas base stations are continuously transmitting signals. Other RF sources in the community include paging and other communications antennae such as those used by fire, police and emergency services. These operate at similar power levels as cellular base stations, and often at a similar frequency. In many urban areas television and radio broadcast antennae commonly transmit higher RF levels than do mobile base stations.

HEALTH EFFECTS OF MOBILE PHONE USE

On Cancer. Current scientific evidence indicates that exposure to radio frequency fields, such as those emitted by mobile phones and their base stations, is unlikely to induce or promote cancers in humans. Though animals studies show increased rates of lymphoma production with exposure to RF fields, the health implications of this result on humans is unclear. Three recent epidemiological studies found no convincing evidence of increase in risk of cancer or any other disease with use of mobile phones.

Other health risks. Scientists have reported other effects of using mobile phones including changes in brain activity, reaction times and sleep patterns. However, these effects are small and have no apparent health significance.

Driving. Research has clearly shown an increased risk of traffic accidents when mobile phones, either handheld or with a “hands-free” kit, are used while driving.

Electromagnetic interference. When mobile phones are used close to some medical devices (including pacemakers, implantable defibrillators, and certain hearing aids) there is a possibility of causing interference.

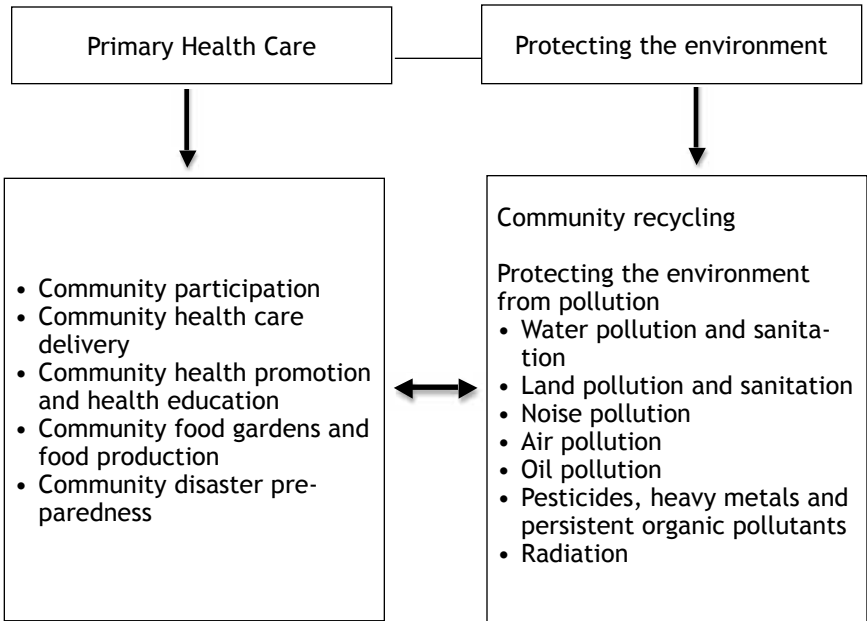
Due to these effects of mobile phones, the community must work together to advocate for policies and ordinances that would safeguard the health of all members of the community.

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FRAMEWORK FOR COMMUNITY HEALTH



CHAPTER 11

ENVIRONMENTAL HEALTH

Environmental health comprises those aspects of human health that are determined by physical, chemical, biological, social and psychosocial factors in the surrounding environment. It also refers to the theory and practice of assessing, correcting, controlling and preventing those environmental factors that have the potential to adversely affect the health of present and future generations. Environmental health focuses on human health risks and hazards associated with natural and built environments.

A suitable living environment requires clean air, clean and adequate water and food, adequate shelter, unpolluted land, freedom from excessive noise and odors, adequate recreation and neighborhood facilities, and convenient services in an environment that provides safety, comfort and privacy.

ENVIRONMENTAL FACTORS AFFECTING HEALTH

There are many environmental factors that may affect our health. Anything in the environment that may pose a risk to public health and safety is potentially an environmental health issue.

The study of positive environmental factors sustaining health and its promotion is Preventive Medicine.

- Sources of nutrition
 - Farming: soil quality, water availability, biodiversity/bio-integrity,
 - Genetically modified organisms
 - Hunting
 - Fishing
 - Wildlife
- Water (drinking, cooking, cleaning / sanitation)
- Air quality
- Ozone layer (protection from UV, cancers, etc)
- Space for exercise and recreation

- Sanitation / waste recycling and disposal

The study of negative environmental factors that threaten health and how to control them is public environmental health.

- Environmental conditions favoring disease vectors (endemic and exotic vectors)
- Invasive biota (viruses, bacteria, etc.), their hosts and vectors
- Environmental disruptions: floods, droughts, storms, fires, earthquakes, volcanic eruptions
- Air quality: pollen and pollution leading to respiratory diseases or cancers
- Water quality: biotic and abiotic contaminants, integrity of water transport and treatment infrastructure
- Monitoring and management of municipal, agricultural, industrial outflows to the environment (gases, liquids, solid wastes)
- Human changes of the environment that
 - Create conditions that favor disease
 - Disturb and release noxious levels of previously bound chemicals (e.g. mercury released becomes poison) or biota (e.g. methane released from thawed peat contributes to climate change)
 - Create temporary, intense, life-threatening heat islands (e.g. urban-heat waves exacerbated by climate change)
 - Result from nuclear, biological or chemical warfare or terrorism
- Disruption caused by war and violence

THE HOUSING ENVIRONMENT

The residential environment

The WHO Expert Committee on the Public Health Aspects of Housing defines housing or residential environment as a “physical structure that man uses for shelter and the environs of that structure including all necessary services, facilities, equipment, and devices needed or desired for the physical and mental health and social-wellbeing of the family and individual.”

Every family and individual has a basic right to a descent home and suitable living environment. Housing must be considered within the context of and relative to the total environment in which it is situated, together with the structure, supplied facilities and services, and conditions of occupancy.

Housing conditions

Housing conditions play a major role in individual health status. A wide variety of housing features may influence the physical, social, and mental well-being of occupants.

Rapid increase in world population and migration into urban areas has brought about housing problems calling for urgent solutions, especially in developing countries. Rapid and uncontrolled urbanization generates a whole series of complex problems ranging from housing, basic sanitation, and environmental pollution. The two most striking features of poor housing are overcrowding and a lack of basic sanitation. The action required seems obvious, but the economic implications are such that no adequate solution has been found in any country to deal effectively with, and to eliminate this basic problem of human settlements.

HOME CLEANLINESS

Essentials of food hygiene

Food sources. Meat must come from approved sources, not from sick animals. Food sources. Meat must come from approved sources, which are free of disease. Fish, oysters and clams must not come from polluted water. Vegetables must not come from areas where sewage is used for watering. Canned food must not come from rusting or bulging tin cans. Food, especially fresh ones and those to be eaten raw, must be washed with safe water.

Transporting food and food materials. Food must be carried in sanitary containers with covers. Transport time should be kept short to prevent spoilage or food should be kept in low temperatures/ in a refrigerated container.

Storage of food. Perishable food and food materials must be refrigerated or kept cold. Wet and dry food and food materials must be stored separately. Food storage must be protected from insects and vermin. Do not store food and food materials together with chemicals. Store food in screened cupboard or cabinets to protect from flies, insects and rats. Do not eat food that has been left in open tin cans for more than 12 hours.

Preparation of food. Use clean utensils and equipment. Wash hands before handling food. Cook well; reheat leftovers before eating.

Food handlers. People who handle food must be healthy and not sick with communicable diseases such as colds, skin diseases, typhoid etc. The cook must not prepare food when s/he has cuts or wounds on the hands. Wear clean clothes when cooking. Wash hands before cooking, especially after coming from the toilet. Clean and trim fingernails regularly.

Utensils and equipment. There should be enough utensils and equipment. Wash and rinse everything with running water, not in a basin where water is constantly reused. Store utensils in clean containers. Protect it from dust, insects and rodents. Do not use cracked, dented or rusty utensils.

Serving. Use clean utensils—plates, forks and spoons, and glass wares. Cleanliness. Food serving areas must be clean and free from insects. Table and table cloths must be clean. Serve food with clean hands. Store leftovers well. Clean kitchen floor and dining room to prevent access of insects and rodents. Eat with clean utensils. If food is eaten with hands, wash hands very well with soap and water before and after eating.

Clean drinking water supply

Drinking water is clean when taken from safe sources and do not contain germs or substances that cause illness.

Sources of water that are safe for drinking:

- A. Well : The depth of a well is not an assurance of water quality. Aquifers or water bearing strata are located differently. There are wells drilled less than 100 feet but still yield good quality drinking water. There are areas (coastal , rocky or hard ground formation) that this depth may not be possible or difficult to reach.
- ❑ Deep well – more than 100 ft in depth and is drilled or driven.
 - ❑ Free flowing well – a shallow or deep well where water is under pressure and may or may not rise above the ground level.
 - ❑ Dug well – is a shallow well dug up manually provided with concrete casing and cover. Water is usually drawn through the use of rope and bucket. Note that this may not provide safe drinking water. When provided with water drawing equipment such as a handpump or a motorized pump, it becomes safe and acceptable source of drinking water. It then becomes an improved dug well.

There should be drainage around and away from the well. The distance of a well from the toilet and any other possible source of contamination should be at least 25 meters to prevent contamination. Wells must always be covered to prevent falling objects.

- B. Springs (improved or protected). There is a natural flow of water as a result of ground seepage (usually at foot at the hill/mountain).
- C. Rain water. In the Philippines, rain water stored in tanks may not be considered safe for drinking due to the problem of maintaining the quality. Large capacity rainwater storage tanks are difficult to clean. Furthermore, areas that the water passes through should also be kept clean (i.e. roof and downspout). It is best that rainwater be used for cleaning and not drinking.
- D. Piped water. Water is distributed to houses by means of pipes; water may or may not be treated, depending on the source.

Water is unsafe if it is contaminated with harmful germs and chemicals that cause sickness and death. If water is taken from rivers, lakes, streams, brooks or ponds, unprotected open dug wells or unprotected springs, it should be boiled or treated with water disinfectants. Avoid using water from these sources for drinking and cooking because these are dirty and unfit for human use. Water from these sources are likely to cause diarrhea, gastro-enteritis, cholera, typhoid fever, dysentery and infectious hepatitis.

Storing and getting water. Use either a pitcher or a jar with a cover and faucet. This way, there is no need for anyone to touch the water directly. Clean the water container after every use. Do not reuse plastic softdrink bottles, plastic juice bottles, or even plastic bottled water for storing water.

These items bought from a store are intended to be used only once—for the original liquid that comes in them. Change unused water for drinking every two or three days. Each family member should use his/her own glass or cup for drinking. Glasses should be washed with soap and running water.

Safe measures around sources of water. Grout the well. Construct drainage around and away from the well. Do not take a bath or wash clothes near the well. Do not allow domestic animals around the well. Possible sources of contamination such as toilet, septic tank, cesspool sewage drainage, animal wallows and garbage dump should be constructed more than 100 ft from the water source.

Collecting water. This is very important because even if the source is safe, water improperly collected becomes unsafe for drinking. Use a clean covered container. Don't contaminate water with dirty hands.

Making household drinking water safe. Boil water an extra three minutes after it has started bubbling. Chlorine compounds and other chemicals (large content of chlorine compounds 60% x 75% available chlorine) may also be

Characteristics of low-risk water sources

- The water source is fully enclosed or protected (capped) and no surface water can run directly into it.
- People do not step into the water while collecting it.
- Latrines are located as far away as possible from the water source and preferably not on higher ground. If there are community concerns about this, expert advice should be sought.
- Solid waste pits, animal excreta and other pollution sources are located as far as possible from the water source.
- There is no stagnant water within 5 metres of the water source.
- If wells are used, the collection buckets are kept clean and off the ground, or a handpump is used.

Taken from *Healthy Villages* by Howard, Bogh, Prüss, Goldstein, Shaw, Morgan and Teuton. WHO, Geneva. 2002

used. Filter water before drinking.

PREVENTION OF DISEASES THAT CAN BE TRANSMITTED BY ANIMALS

Insect and vermin can be controlled by destroying breeding places and harborage of insects and vermin. [Refer to Table 19] These pests carry diseases like diarrhea, cholera, typhoid, malaria/ dengue, H-fever, parasitism, allergies, Tb, influenza, gastro-enteritis, Bubonic Plague, and leptospirosis.

To get rid of pests and rats, throw garbage properly. Clean both the inside and outside of the house. Houses must have a sanitary toilet. Destroy breeding places of pests. Cover food properly.

Insects and rats are not the only animals that could cause health problems for the family. Pet allergies can develop in anyone at any age in their life. Most people that suffer from pet allergies often have mild or moderate

Table 19. Removing vermin from the home

Insect/vermin	Breeding & harborage places	Ways of removing them
Mosquitoes	Slow flowing or stagnant water, tins, tires, tree holes, large leaves holding rain water, water storage tanks, drums, flower vase	Drain stagnant water, remove tins, tires and leaves; change water and storage tanks, drums, flower vase weekly and more often
Flies	Unsanitary toilet, garbage dumping place, animal manure, other decaying organic matter	Improve toilet. Cover dumping site with at least two feet of soil; remove all manure and other decaying organic matter
Bed Bugs	Beds, cushions, chairs, mattresses	Pour boiling water or apply hot steam and chemicals
Cockroaches	Dark, damp places like underneath kitchen sink, behind cupboard cook shelves	Clean areas and spray chemicals; cover food and garbage cans.
Rats	Unsanitary toilet, garbage dumping place, drainage, storage rooms	Improve toilet. Cover dumping site at least two feet of soil; clean garbage can and provide cover, rat proof storage room
Ants	Mounds near the house or under the house near food sources	Destroy mound with chemical spray; store food properly; clean garbage can and kitchen; remove food particles in the areas

allergies to pollens or molds. People who are allergic to animals are often allergic to the animal dander (i.e., dead skin that is continually shed), saliva or urine. Cats and dogs are the most common pets, and thus top the list of animals that people are most allergic to. However, people can also be allergic to birds, hamsters, rabbits, mice, guinea pigs and larger animals such as horses, goats and cows. There are often certain types of animals that people are more allergic to than others. In addition, there may be certain animals within a given species that are more allergy-inducing than others. This appears particularly true with cats.

People developing allergic reactions may suffer from itchy and puffy eyes, runny nose, difficulty breathing, red itchy skin, rashes, or worse, a dangerous sudden drop in blood pressure also known as hypotension. People, especially children, may be unaware that they have allergies. They may suffer from some of these symptoms and simply attribute it as frequent incidence of 'colds' and asthma symptoms. If the person is separated from the animal for several days to weeks, many of these symptoms will subside and occur only when they come into contact with the animal again.

Dogs can also pass germs to people, although touching or owning dogs will not likely cause diseases. Dogs can carry a variety of germs that can make people sick. For example, puppies may pass bacteria in their feces that can cause diarrhea in people. Puppies and some adult dogs often carry a variety of parasites that cause rashes or illness in people. It is thus very important to wash hands after touching and playing with dogs or cleaning up their urine and feces. Leptospirosis, though more commonly associated with rats, can also develop from a particular serovar associated with dogs. Dogs can also carry rabies, a deadly viral disease. In case of dog bites and deep scratches, find out immediately if the dog has been vaccinated against rabies. If not, or if not sure, it is imperative that the patient be immediately brought to a hospital for rabies treatment.

Different types of farm animals can also carry different diseases. For example, cows and calves can carry E. coli bacteria that causes bloody diarrhea in people. Children can develop kidney failure due to E. coli infection. Chickens can carry bacteria such as Salmonella, which causes the disease salmonellosis. Many of these germs are in farm animal manure. For the best protection against animal-borne bacteria and viruses, thoroughly wash hands with running water and soap after contact with the animal, its saliva, urine or feces.

LIGHTING AND ILLUMINATION AT HOME

The home should be a place where people can feel at ease. If there are eye-sight problems, everyday activities like cooking, reading a letter or just going upstairs can seem quite daunting. By making simple changes to the lighting

in the home, it will be easier to see things and be more comfortable in moving around.

General lighting tips for the home

Keep light levels the same. It can take a long time for eyes to adapt when moving from bright to dark places. Try to keep lighting levels bright and even throughout the home. Using more light fittings or higher wattage bulbs increases the light levels. Always remember: do not use higher wattage bulbs without checking that the bulb is safe for the fittings and shades available in the house.

Lighting tips for the daytime. Keep curtains drawn back clear of the windows. Use lightweight coverings like blinds if completely bare windows are not desirable. Keep windows clean, so more natural light can come through. Paint window frames and walls a light color to help make the most of daylight.

Better lighting for doing things up close. Use better lighting for reading, writing, sewing. Have good general lighting in the room. Have a second light source or a task light that can shine directly onto the work or reading area.

Using adjustable task lamps. Adjustable lamps are particularly useful because these can be pointed to make the light fall directly onto the task at hand. Adjustable lamps have an adjustable arm and flexible head attached to a base, which can be on the floor or desk, standing alone or wall mounted.. The best position for an adjustable lamp is between the user and the task—directed at the task, below eye level. Take precautions in using or adjusting a lamp shade that may have become too hot.

Using table lamps and standard lamps. Normal table lamps and standard lamps give good extra lighting in a room, but are not ideal for use with close-up tasks. The light doesn't shine directly on the work area and is often not very bright. The light bulbs in standard lamps are further away, which means that less light can shine on a specific work area. The bulbs usually face upwards and the shades do not direct light very well, a lot of light is lost from the top. Use light colored lamp shades with white lining inside on table or standard lamps, so that more of the light given out by the lamp is reflected onto the task area. Table lamp shades direct the most light if these are 10 to 12 inches wide. For extra lighting during a close up task, use an adjustable task lamp rather than a table or standard lamp.

Lighting on the stairs and landing. Take particular care to keep the stairs and landing brightly and evenly lit. These areas are often more dimly lit than the rooms leading onto them and this can be dangerous. If possible, make sure that stair lighting can be switched on and off at the top and bottom of the stairs.

Lighting in the kitchen. Fix lights to wall cupboards or shelves so that these shine directly onto the worktop. Be careful to position lighting so that it does not shine directly into the cook's eyes while working.

Reducing light levels. Sometimes, people prefer less light. Switching the overhead lights off and using lamps means that light levels will be uneven. Use a dimmer switch to reduce light levels evenly throughout a room and to vary the amount of overhead light.

Different types of light bulbs for lamps

Filament bulbs. The most commonly used bulbs are filament light bulbs. These are usually balloon-shaped with wires inside. The brightness of these bulbs depends on the number of watts. The higher the number of watts, the brighter the bulb will be. These bulbs can be made from clear, frosted, white or colored glass. Try not to use clear bulbs as these can be uncomfortable and create confusing shadows. Frosted and white bulbs give a more even light than clear bulbs. These only lose a small amount of light and are more comfortable to use. Bulbs that simulate natural light are often called “day-light bulbs” and are more expensive. These give off a particular white light that some people find more preferable. However, filament bulbs can get very hot and cause burns in a person who touches them or is next to one for a long time. Filament bulbs also use more electricity than fluorescent bulbs. Important: Do not use higher wattage bulbs without checking if these are safe for the fittings and shades in which these are to be used.

Fluorescent bulbs. More adjustable lamps are available now that use fluorescent bulbs. These are sometimes called PL fluorescent bulbs. Although these lamps are more expensive to buy, these are cheaper to run. PL fluorescent bulbs do not get very hot when used, last up to eight times longer, and give off five times the amount of light than ordinary bulbs of the same wattage.

Halogen lights. Halogen lights are very bright. However, the bulbs are very expensive and use a lot of electricity. These also get very hot. Grease from fingers may shorten the life of a halogen bulb. Always use a cloth to handle halogen bulbs.

Safety tips

- Make sure that lamps do not have trailing wires or leads.
- Use a multi-plug that allows for number of plugs to be used safely rather than socket adapters that can be dangerous.
- Make sure that lamps have the correct fuses in their plugs and that the bulb is of the correct wattage for the shade.
- If there are any doubts about the safety of a light or plugs, call an electrician.
- Be careful if moving a lamp with a detachable base.

VENTILATION IN THE HOME

Good ventilation is important because it helps protect health and home. Ventilation supplies fresh air to the home and dilutes or removes stale air. There are many ways this can happen. Opening windows can supply fresh outdoor air that dilutes stale indoor air. Turning on the fan over the kitchen range or in the bathroom removes odors and moisture.

Effects on health

Good ventilation protects people from unpleasant odors, irritating pollutants, and potentially dangerous gases like carbon monoxide and radon. Well planned ventilation also prevents the growth of mold and mildew, which can cause or aggravate allergic reactions and lung problems such as asthma.

Effects on the house

Good ventilation protects the home from damage by eliminating excess moisture from the air. Too much moisture rots window sills and eaves, peels paint, and invites insect infestation. Damp insulation in walls and ceilings means lost heat, higher fuel bills and destructive mold growth. Carpeting, wallpaper, electronic equipment and furniture all can be damaged by excess moisture.

These conditions may be signs of poor ventilation:

- Sour smell of garbage from a trash can
- Musty, gym-like smell coming from the bedroom walls
- Spot molds or mildews in closets, or on ceilings or exterior walls
- Condensation on the inside of windows
- Eyes are irritated when at home

Fixing home ventilation

While just opening a window may seem like an easy, low-cost way to provide fresh air, a fan is needed to make sure this air goes where it is needed.

Ventilation basics

Spot ventilation for localized pollution sources

- Spot ventilation uses exhaust fans to collect and remove pollutants before these spread throughout the house. The exhaust fan is generally turned on only when the source is producing pollutants. Bathrooms, kitchens, and laundry rooms all contain obvious sources of moisture and odors.
- Spot ventilation may also be appropriate for home offices, hobby rooms, or workshops. Spot ventilation is also needed in those places where strong sources are located, such as bathrooms and kitchens.

General ventilation dilutes pollutants from sources that exist in many locations or move from place to place.

- General ventilation fans run all the time to control pollutants from sources that can't be spot-ventilated.
- For example, people and pets constantly release flakes of skin, bacteria, viruses, moisture, body odors and digestive gases. Some sources, including carpets, furniture, and drapes, all of which release fabric fibers and gases such as formaldehyde, are too large or spread out to be spot ventilated.
- General ventilation mixes fresh outdoor air with stale indoor air to lower the concentration of pollutants (dilution).
- Fresh air is provided by fans blowing outdoor air into the house, which forces air out through cracks and openings (pressurizing), or by exhausting air from the house that then draws fresh air inside (depressurizing).

General ventilation can be provided in two ways:

Exhaust-only. With exhaust-only ventilation, exhaust fans pull stale air out of the home while drawing fresh air in through cracks, windows or fresh air intakes. Using this strategy will depressurize the home. Exhaust-only ventilation is a good choice for homes that do not have existing ductwork to distribute cooled air.

Supply-and-exhaust. With supply-and-exhaust ventilation, exhaust fans pull stale air out of the house while intake fans blow in fresh air. This system is more complex than exhaust-only, but may ensure the best flow of fresh air into the home. In the Philippines, the most common supply of air is the electric fan. However, this does not mean that the air circulating around the home is fresh. Open windows, especially in the provinces with less air pollution, is still the best source of fresh air.

NOISE AND AIR POLLUTION

[Refer to Chapter 10 Community Health]

INDOOR AIR POLLUTION

Every year, indoor air pollution is responsible for the death of 1.6 million people—that's one death every 20 seconds. More than half of the world's population relies on dung, wood, crop waste, or coal to meet their most basic energy needs. Cooking and heating with such solid fuels on open fires or stoves without chimneys leads to indoor air pollution. Particulate pollution levels in indoor pollution may be 20 times higher than accepted guideline values. In poorly ventilated dwellings, indoor smoke can exceed acceptable levels for small particles in outdoor air a hundredfold. Indoor smoke con-

tains a range of health-damaging pollutants, such as carbon monoxide and small soot or dust particles that are able to penetrate deep into the lungs.

Exposure is particularly high among women and children, who spend the most time near the domestic hearth. The use of polluting fuels thus poses a major burden on the health of poor families in developing countries. The dependence on such fuels is both a cause and a result of poverty as poor households often do not have the resources to obtain cleaner, more efficient fuels and appliances. Reliance on simple household fuels and appliances can compromise health and thus hold back economic development, creating a vicious cycle of poverty.

The health impact: a major killer

The World Health Organization revealed indoor air pollution as the 8th most important risk factor and responsible for 2.7 percent of the global burden of disease. Globally, indoor air pollution from solid fuel use is responsible for 1.6 million deaths due to pneumonia, chronic respiratory disease and lung cancer, with the overall disease burden exceeding the burden from outdoor air pollution five fold. Disease burden is measured in Disability-Adjusted Life Years, a measure combining years of life lost due to disability and death.

In high-mortality developing countries, indoor smoke is responsible for an estimated 3.7 percent of the overall disease burden, making it the most lethal killer after malnutrition, unsafe sex, and lack of safe water and sanitation. Indoor air pollution has been associated with a wide range of health outcomes. Evidence for these associations has been classified as strong, moderate or tentative.

There is consistent evidence that exposure to indoor air pollution increases the risk of pneumonia among children under five years, and chronic respiratory disease and lung cancer (in relation to coal use) among adults over 30 years old. The evidence for a link with lung cancer from exposure to biomass smoke and for a link with asthma, cataracts, and TB was considered moderate.

On the basis of the limited available studies, there is tentative evidence for an association between indoor air pollution and adverse pregnancy outcomes (i.e. low birth weight), ischemic heart disease and nasopharyngeal and laryngeal cancers.

While the precise mechanism is still unclear, it is known that small particles and several of the other pollutants contained in indoor smoke cause inflammation of the airways and lungs and impair the immune response. Carbon monoxide also results in systemic effects by reducing the oxygen-carrying capacity of the blood.

Pneumonia and other acute lower respiratory infections. Globally, pneumonia and other acute lower respiratory infections represent the single most important cause of death in children under five years. Exposure to indoor air pollution more than doubles the risk of pneumonia and is thus responsible for more than 900,000 of the two million annual deaths from pneumonia.

Chronic Obstructive Pulmonary Disease. Women exposed to indoor smoke are three times as likely to suffer from chronic obstructive pulmonary disease, such as chronic bronchitis, than women who cook and heat with electricity, gas and other cleaner fuels. Among men, exposure to this neglected risk factor nearly doubles the risk of chronic respiratory disease. Consequently, indoor air pollution is responsible for approximately 700 000 out of the 2.7 million global deaths due to COPD.

Lung cancer. Coal use and cooking on open fires or simple stoves can cause lung cancer in women. Exposure to smoke from coal fires doubles the risk of lung cancer, in particular among women who tend to smoke less than men in most developing countries. Every year, more than one million people die from lung cancer globally, and indoor air pollution is responsible for approximately 1.5 percent of these deaths.

Impacts on children and women

In most societies, women are in charge of cooking and, depending on the demands of the local cuisine, they spend between three and seven hours per day near the stove, preparing food. Fifty nine percent of all indoor air pollution-attributable deaths thus fall on females. Young children are often carried on their mother's back or kept close to the warm hearth. Consequently, infants spend many hours breathing indoor smoke during their first year of life when their developing airways make them particularly vulnerable to hazardous pollutants. As a result, 56 percent of all indoor air pollution-attributable deaths occur in children under five.

Smoking at home

Banning smoking in the home, even when parents smoke, gives an unequivocal message to teenagers about the unacceptability of smoking, as do restrictions on smoking in public places. Exposure to environmental tobacco smoke during childhood has been suggested to increase tolerance for tobacco smoke and sensitize children taking up active smoking in their teenage years by reducing the noxious deterrent of the first cigarette. Thus, children who are exposed more often to parents smoking inside the home have an increased likelihood of becoming established smokers.

Effects of smoking at home. Most people spend about 90 percent of their time in two "microenvironments:" home and work. Populations at greater risk of harm from Environmental Tobacco Smoke (ETS) are those who live with

smokers. For a given microenvironment, the harm from passive smoking depends on time spent in that environment and the concentration of ETS in that air space. However, some are more susceptible to harm because of age and health status.

Infants and children exposed to ETS are more likely to develop pneumonia, bronchitis, asthma and middle ear disease. One reason that their lungs and other respiratory tissue are still developing. The infant lung has immature immunologic function, very small airways that are vulnerable to obstruction, and fewer alveoli in relation to the number of airways. Children are also more prone to illness from ETS because they have a higher respiratory rate than adults, and because some ETS-associated conditions (e.g. middle ear disease) occur primarily at young ages.

Persons with certain chronic conditions are more likely than healthy people to suffer when exposed to ETS. Passive smoking exacerbates symptoms of asthma. In addition, persons with allergies, chronic obstructive pulmonary disease, chronic heart disease, and peripheral vascular disease may be more susceptible to the ill effects of ETS and its constituents (e.g. Carbon Monoxide)

WASTE MANAGEMENT IN THE HOME

Human and animal waste disposal

There is a need to dispose human

waste (excreta) properly because it can spread communicable and parasitic diseases such as gastroenteritis, diarrhea, typhoid, cholera, dysentery, infectious hepatitis and schistosomiasis. It attracts flies, cockroaches, ants, rodents and animals, all of which can carry disease germs to food materials and water and can cause illness.

Measures of reducing excreta-transmitted disease

- Use of sanitary toilet facilities
- Good personal hygiene practices
- Proper handling and preparation of food
- Water disinfection
- Identification and elimination of breeding places
- Treatment of infected people

There are three ways involved in disposing human waste: use of pit privy, use of sanitary toilet and by burying.

Types of sanitary toilets:

- Water sealed toilets
- Flush toilet
- Sanitary pit privy – (in areas where water is insufficient)
- Communal toilet – toilets used by a group of people usually found in markets, other public places and those people who are willing to share maintain and repair the toilet

Types of sanitation facilities

Level I. Pit latrine

- Sanitary pit privy, antipolo type or ventilated improved pit latrine

- ❑ Used in rural areas
- ❑ Simplest excreta disposal system

Level II. Pour-flush toilet

- ❑ Built with a pit or a septic tank
- ❑ Water-sealed
- ❑ Requires water throughout the year

Level III. Flush toilet

- ❑ Has tank and bowl
- ❑ Mechanism involves a flush valve that is plunged for water in the tank to flow into the bowl
- ❑ Water flowing into the bowl also cleans the bowl

Types of unsanitary toilets:

- Overhung – can contaminate bodies of water
- Cat hole – may be breeding place for flies and other insects
- Antipolo type – usually unsanitary; serves as breeding places for insects and rats

In rural areas, excreta disposal facilities should be simple and easy to construct using locally-available, inexpensive materials. They should provide privacy and adequate protection against the elements. As well, maintenance should not be a burden to the users.

Selecting a site for sanitary latrines

- Should be located 25 meters or more away from water source
- 25 m. away from swamps and coastlines
- Above maximum flood level to avoid submergence or overflowing
- Located downhill of an existing

water source to avoid contamination

- Open-pit latrine must not be too close to residential houses
- Pit latrine should be placed where it can be easily cleaned
- Ground water should not be contaminated by latrines. It should not be too deep that ground water level is reached
- Cover hole when nobody is using toilet
- Sweep slab regularly
- Keep surroundings clean
- Build fence to protect it from stray animals
- Construct drainage canal around toilet to divert surface runoff and flood water
- Pour kitchen ashes down the pit once every other day to minimize foul odor
- Advise children on proper use of toilet to prevent accidents

Maintain of sanitary toilets:

- Always have enough supply of water available for flushing toilet bowl
- Use covered waste can to serve as toilet paper container
- Disinfect toilet with Lysol once a month to keep away odor
- Clean unsightly stains on bowl with muriatic acid
- Do not throw objects inside bowl to prevent clogging
- In case of clogged bowls, use a plunger to clear up
- Never poke rods or sticks inside the bowl to prevent breaking the trap way.

Safe disposal of animal wastes:

- Animals should be held in a pen

- with proper drainage
- Clean up animal waste
- Dispose of wastes properly
- Cover animal manure with soil to prevent access by insects

Disposal of medicine:

The medicine cabinet should be cleaned regularly and rid of old and expired medicines. The old advice was to flush medicines down the toilet. However, traces of some medicines have been found in the water supply as drug passes through water treatment systems. These can kill helpful bacteria in septic systems. Flush prescription drugs down the toilet only if the accompanying patient information specifically instructs it is safe to do so.

To safely dispose of medicines, take unused, unneeded or expired prescription drugs out of their original containers. Mix the prescription drugs with an undesirable substance, like used coffee grounds or pet litter and put these in nondescript containers, such as empty cans or sealable bags, ensuring that the drugs are not accidentally taken by children or pets. Throw these containers in the trash.

Personal cleanliness

[Also refer to Chapter 3 Personal Health]

- Always wash hands with soap and clean water:
- Take a bath with soap and clean water everyday
- Keep clothes clean
- Brush teeth at least three times a day

- In areas where hookworms and schistosomiasis is common, do not go barefoot. These parasites enter the body through the pores of the skin.

To make homes and surroundings clean:

Sweep floors in the house everyday and wash them often. Do not let anyone spit on the floor. Keep walls clean and free of insects. Keep all sleeping mats clean and put them out in the sun for a while each day. Keep animals out of the house. Keep toilet clean and be sure all family members use it properly. Keep ground around the house clean and drain all pools or old tins of standing water. Keep animals away from places where children play. Burn all household waste or bury in a special pit. Have a blind drainage for dirty water.

HOME GARDENS

Gardening

Gardening is the practice of growing flowering plants, vegetables and fruits. Residential gardening most often takes place in or about a residence, in a space referred to as the garden.

Gardening compared to farming

In respect to its food producing purpose, gardening is distinguished from farming chiefly by scale and intent. Farming occurs on a larger scale and with the production of saleable goods as a major motivation.

Gardening is done on a smaller scale, primarily for pleasure and to produce goods for the gardener's own family or community. There is some overlap between the terms, particularly in that some moderate-sized vegetable growing concerns, often called market gardening, can fit in either category.

The key distinction between gardening and farming is essentially one of scale: gardening can be a hobby or an income supplement, but farming is generally understood as a full-time or commercial activity, usually involving more land and quite different practices.

One distinction is that gardening is labor-intensive and employs very little infrastructural capital, typically no more than a few tools, e.g. a spade, hoe, basket and watering can.

By contrast, larger-scale farming often involves irrigation systems, chemical fertilizers and harvesters or at least ladders, e.g. to reach up into fruit trees. However, this distinction is becoming blurred with the increasing use of power tools in even small gardens. In part because of labor intensity and aesthetic motivations, gardening is very often much more productive per unit of land than farming. The term precision agriculture is sometimes used to describe gardening using intermediate technology (more than tools, less than harvesters), especially of organic varieties. Gardening is effectively scaled up to feed entire villages of over 100 people from specialized plots. A variant is the community garden which offers plots to urban dwellers.

Biointensive gardening

In response to the 1984 economic crisis in the Philippines, the International Institute for Rural Reconstruction developed a bio-intensive gardening program in the Province of Negros Occidental to increase food availability for Negros islanders. Two years after bio-intensive gardening was introduced in 1986, the rate of malnutrition had dropped from 40 to 25 percent.

Bio-intensive gardening aims to rebuild and maintain soil fertility through nutrient cycling, diversified cropping and deep-bed preparation on small-scale plots (200-500 sq. feet).

Bio-intensive gardens contain a diverse range of indigenous crops which minimizes the opportunities for pest outbreaks and preserves indigenous seed varieties.

Families with these gardens can save cash that they would normally spend on food or non-food essentials for the family. Bio-intensive gardens may also produce enough food for families to sell the surplus and still meet their own nutritional needs.

While this food production method is labor intensive, it maximizes food production within smaller spaces, important in heavily populated areas. Costs are lower, as biointensive methods are organic, using no expensive commercial fertilizers, pesticides, engineered seeds or large farm equipment.

Composting

Composting is the decomposition of plant remains and other once-living materials to make an earthy, dark, crumbly substance that is excellent for adding to houseplants or enriching garden soil. It is the way to recycle yard and kitchen wastes and is a critical step in reducing the volume of garbage needlessly sent to landfills for disposal. In the natural environment, composting is what happens as leaves pile up on the forest floor and begin to decay. Eventually, the rotting leaves are returned to the soil, where living roots can finish the recycling process by reclaiming the nutrients from the decomposed leaves.

Compost has several advantages over synthetic fertilizers. First it adds organic matter, which improves the way water interacts with the soil. In sandy soils, compost acts as a sponge to help retain water in the soil that would otherwise drain down below the reach of plant roots. In this way, it protects plants against drought. In clay soils, compost helps to add porosity (i.e. tiny holes and passageways) to the soil, making it drain more quickly so that it doesn't stay waterlogged and doesn't dry out into a bricklike substance. Compost also inoculates the soil with vast numbers of beneficial microbes (bacteria, fungi, etc.) and the habitat that the microbes need to live. These microbes are able to extract nutrients from the mineral part of the soil and eventually pass the nutrients on to plants.

Vermiculture

The difference between vermiculture and vermicomposting

Vermiculture is the culture of earthworms. The goal is to continually increase the number of worms in order to obtain a sustainable harvest. The worms are either used to expand a vermicomposting operation or sold to customers who use them for the same or other purposes.

Vermicomposting is the process by which worms are used to convert organic materials (usually wastes) into a humus-like material known as vermicompost. The goal is to process the material as quickly and efficiently as possible. These two processes are similar but different. If the goal is to produce vermicompost, there should be maximum worm population density all of the time. If the goal is to produce worms, keep the population density low enough that reproductive rates are optimized.

Potential Benefits and Constraints

Vermicompost appears to be generally superior to conventionally produced

compost in a number of ways. It is superior to most composts as an inoculant in the production of compost teas. Worms have a number of other possible uses on farms, including value as a high-quality animal feed. Vermicomposting and vermiculture offer supplemental income to organic farmers. Working with worms is a more complicated process than traditional composting. It can be quicker, but to make it so generally requires more labor. It requires more space because worms are surface feeders and won't operate in material more than a meter in depth. It is more vulnerable to environmental pressures, such as freezing conditions and drought. Perhaps most importantly, it requires more start-up resources, either in cash or in time and labor.

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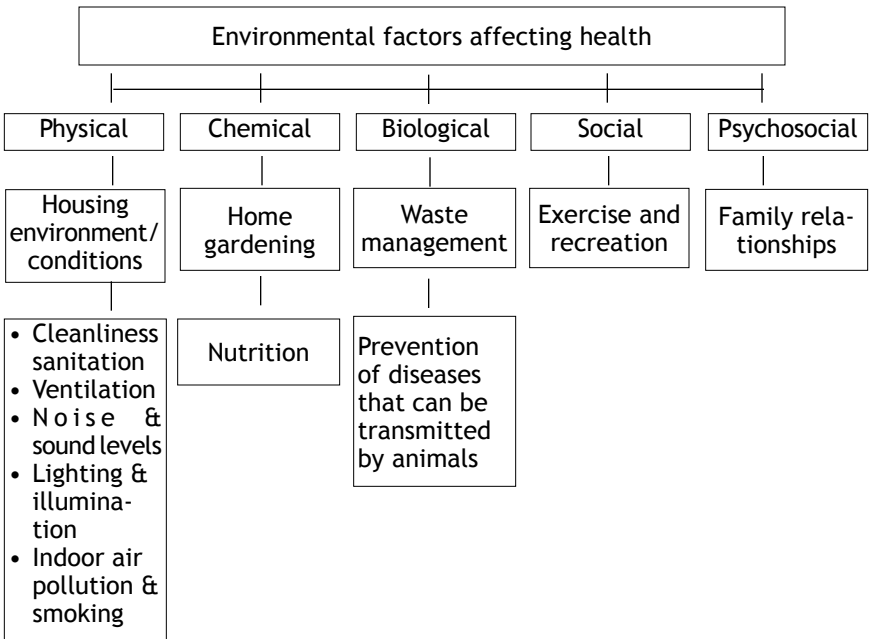
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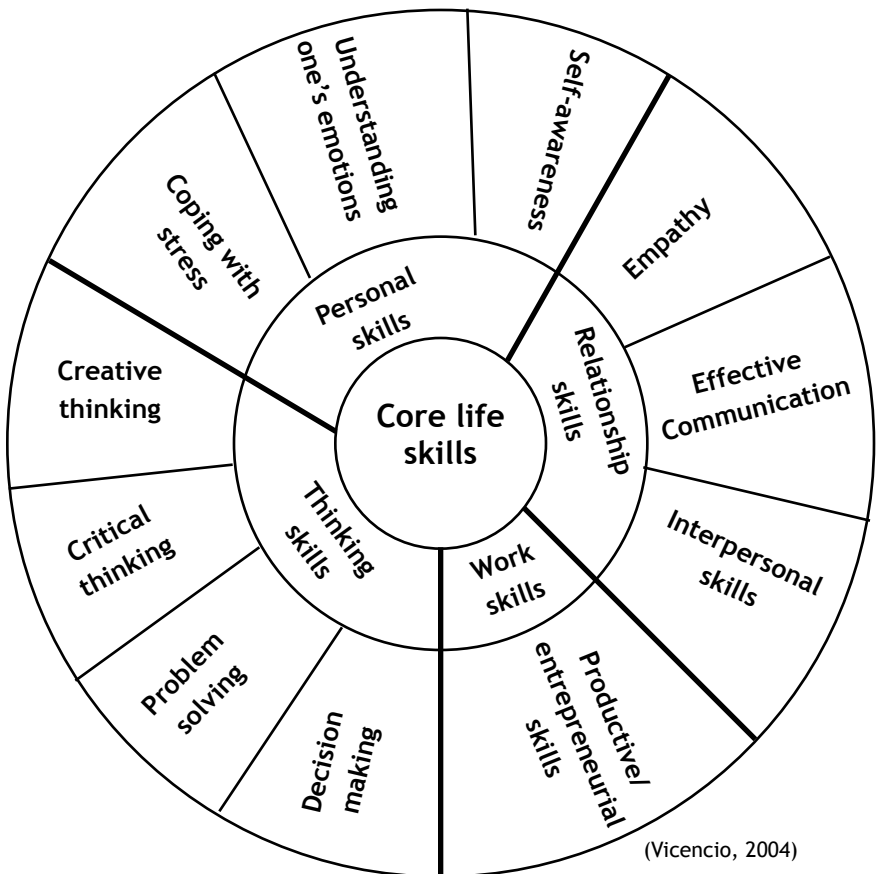
FRAMEWORK FOR ENVIRONMENTAL HEALTH



APPENDICES

Appendix A CORE LIFE SKILLS IN THE BASIC EDUCATION CURRICULUM

Around the world, Life Skills-Based Education is being adopted as a means to empower young people in challenging situations. LSBE refers to an interactive process of teaching and learning which enables learners to acquire knowledge and to develop attitudes and skills which support the adoption of healthy behaviors. It is also a critical element in UNICEF's (United Nations Children's Fund) definition of quality education.



In the Philippine context, life skills are defined as abilities for positive and adaptive behavior that enable individuals to deal effectively with the demands, challenges, experiences and situations of everyday life. Recognizing the physical, psychosocial, mental, cultural and spiritual needs and concerns of Filipino children and youth, an enabling and supportive environment has to be developed for the enhancement of their life skills. The latter are indeed numerous, but like many countries of the world, the Philippine would like to develop, enhance and reinforce the acquisition and practice of the following life skills critical to the holistic development of the young.

Self-awareness includes our recognition and appreciation of our basic worth and dignity as persons, our character, our strengths and weaknesses, desires and dislikes, our uniqueness.

Empathy is the ability to imagine what life is like for another person, even in a situation that we may not be familiar with. Empathy can help us to understand and accept others who may be different from ourselves, which can improve social interactions, for example, in situations of ethnic or cultural diversity.

Effective communication means that we are able to express ourselves, both verbally and non-verbally in ways that are appropriate to our cultures and situations. This means being able to express opinions and desires, but also needs and fears. It may also mean being able to ask for advice and help in times of need.

Interpersonal relationship skills help us to relate in positive ways with the people we interact with. This may mean being able to make and kind friendly relations, which can be of great importance to our mental and social well-being. It may mean keeping good relations with family members, which are an important source of social support. It may also mean being able to end relationships constructively.

Decision-making skills help us deal constructively with decisions about our lives. This can have consequences for health if young people actively make decisions about their actions in relation to health by assesses the different options, and the effects different decisions may have.

Problem-solving skills enable us to deal constructively with problems in our lives. Significant problems that are left unresolved can cause mental and emotional stress, and give rise to accompanying physical strain.

Creative-thinking skills contribute to both decision making and problem solving by enabling us to explore the available alternatives and various consequences of our actions or lack thereof. It helps us look beyond our direct

experiences, and even if no problem is identified, or no decision is to be made, creative thinking skills can help us adapt and be flexible when dealing with daily life.

Critical thinking is an ability to analyze information and experiences in an objective manner. It can contribute to health by helping us recognize and assess the factors that influence attitudes and behavior, such as values, peer pressure and the media.

Understanding one's emotions involves recognizing emotions in ourselves and others, being aware of how emotions influence behavior and responding to emotions appropriately. Intense emotions, like anger or sorrow, can have negative effects on health if we do not respond appropriately.

Coping with stress is both recognizing the sources of stress in our lives, how these factors affect us, and acting in ways that help control our levels of stress. This may mean that we take action to reduce the sources of stress e.g. by making changes to our physical environment or lifestyle. It may also mean adopting strategies to help us deal with stressors e.g. learning relaxation techniques so that tensions created by unavoidable stress do not give rise to health problems.

Production / entrepreneurial skills is an addition to the core life skills for Filipino children and youth. It is basically defined as the ability to utilize and maximize internal and external resources toward generative productive endeavors responsive to young people's needs.

Appendix B
DECLARATION OF ALMA-ATA
International Conference on Primary Health Care
Alma-Ata, USSR, 6-12 September 1978

The International Conference on Primary Health Care, meeting in Alma-Ata this twelfth day of September in the year Nineteen hundred and seventy-eight, expressing the need for urgent action by all governments, all health and development workers, and the world community to protect and promote the health of all the people of the world, hereby makes the following Declaration:

- I. The Conference strongly reaffirms that health, which is a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, is a fundamental human right and that the attainment of the highest possible level of health is a most important world-wide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector.
- II The existing gross inequality in the health status of the people particularly between developed and developing countries as well as within countries is politically, socially and economically unacceptable and is, therefore, of common concern to all countries.
- III Economic and social development, based on a New International Economic Order, is of basic importance to the fullest attainment of health for all and to the reduction of the gap between the health status of the developing and developed countries. The promotion and protection of the health of the people is essential to sustained economic and social development and contributes to a better quality of life and to world peace.
- IV The people have the right and duty to participate individually and collectively in the planning and implementation of their health care.
- V Governments have a responsibility for the health of their people which can be fulfilled only by the provision of adequate health and social measures. A main social target of governments, international organizations and the whole world community in the coming decades should be the attainment by all peoples of the world by the year 2000 of a level of

health that will permit them to lead a socially and economically productive life. Primary health care is the key to attaining this target as part of development in the spirit of social justice.

VI Primary health care is essential health care based on practical, scientifically sound and socially acceptable methods and technology 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 at every stage of their development in the spirit of self-reliance and self-determination. It forms an integral part both of the country's health system, of which it is the central function and main focus, and of the overall social and economic development of the community. It is the first level of contact of individuals, the family and community with the national health system bringing health care as close as possible to where people live and work, and constitutes the first element of a continuing health care process.

VII Primary health care:

- reflects and evolves from the economic conditions and sociocultural and political characteristics of the country and its communities and is based on the application of the relevant results of social, biomedical and health services research and public health experience;
- addresses the main health problems in the community, providing promotive, preventive, curative and rehabilitative services accordingly;
- includes at least: education concerning prevailing health problems and the methods of preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; and provision of essential drugs;
- involves, in addition to the health sector, all related sectors and aspects of national and community development, in particular agriculture, animal husbandry, food, industry, education, housing, public works, communications and other sectors; and demands the coordinated efforts of all those sectors;
- requires and promotes maximum community and individual self-reliance and participation in the planning, organization, operation and control of primary health care, making fullest use of local, national and other available resources; and to this end develops through appropriate education the ability of communities to participate;
- should be sustained by integrated, functional and mutually supportive referral systems, leading to the progressive improvement of comprehensive health care for all, and giving priority to those most in need;
- relies, at local and referral levels, on health workers, including physi-

cians, nurses, midwives, auxiliaries and community workers as applicable, as well as traditional practitioners as needed, suitably trained socially and technically to work as a health team and to respond to the expressed health needs of the community.

- VIII All governments should formulate national policies, strategies and plans of action to launch and sustain primary health care as part of a comprehensive national health system and in coordination with other sectors. To this end, it will be necessary to exercise political will, to mobilize the country's resources and to use available external resources rationally.
- IX All countries should cooperate in a spirit of partnership and service to ensure primary health care for all people since the attainment of health by people in any one country directly concerns and benefits every other country. In this context the joint WHO/UNICEF report on primary health care constitutes a solid basis for the further development and operation of primary health care throughout the world.
- X An acceptable level of health for all the people of the world by the year 2000 can be attained through a fuller and better use of the world's resources, a considerable part of which is now spent on armaments and military conflicts. A genuine policy of independence, peace, détente and disarmament could and should release additional resources that could well be devoted to peaceful aims and in particular to the acceleration of social and economic development of which primary health care, as an essential part, should be allotted its proper share.



The International Conference on Primary Health Care calls for urgent and effective national and international action to develop and implement primary health care throughout the world and particularly in developing countries in a spirit of technical cooperation and in keeping with a New International Economic Order. It urges governments, WHO and UNICEF, and other international organizations, as well as multilateral and bilateral agencies, nongovernmental organizations, funding agencies, all health workers and the whole world community to support national and international commitment to primary health care and to channel increased technical and financial support to it, particularly in developing countries. The Conference calls on all the aforementioned to collaborate in introducing, developing and maintaining primary health care in accordance with the spirit and content of this Declaration.

Appendix C

SAMPLE LESSON PLANS

THE CIRCULATORY SYSTEM

(Grade 6, Science and Health: Personal health; Health promotion and prevention of diseases)

I. Objectives

- Identify features of the circulatory system.
- Explore the needs of the human body by explaining the importance of good health in relationship to the body.
- Understand the functions and care of the human body and its organs.

II. Materials

- Heart visual aid; circulatory system visual aid
- Watch with second hand
- Scrap paper, cut into half sheets
- Rope, clothespins, index cards
- Study Note worksheet (see below)
- Sequence of blood flow beginning from the heart (to be prepared by teacher)

III. Procedure/ Activity

1. Teacher introduces the circulatory system. Begin discussion about the heart. Review that the heart is one of the involuntary muscles discussed in the last class. The teacher will hand out a piece of scrap paper to each student. The student will crumple it into a ball and hold it in his hand. Teacher watches the clock and counts to 90 in one minute. Teacher instructs students to squeeze the paper ball each time a number is said. This demonstrates how strong the heart is and how hard it works. Begin discussion covering the following information:
 - The heart is a hollow muscle that has 2 pumps
 - The beating sound is made by the valves closing as the heart allows blood to pass in and out of the chambers.
2. Use a visual aid (chart) to show students how blood passes through the right side of the heart, to the lungs, to the left side of the heart and out to the body. Teacher presents information about veins and arteries.

3. Teacher shows students where they can locate their pulse (neck or wrist) as they stand beside their desks. The students will run in place for one minute. Students stop running and feel their pulses. The students will describe how their pulses feel.
4. Using a rope tied to two stationary objects in the front of the classroom, teacher hands out index cards to student volunteers, programmed with the sequence of steps describing the blood's passage through the heart (one step per card). Students will attach their card to the rope with a clothespin. When all the students have finished placing their cards, the teacher will check the order. The students will read the card they hung aloud to the class.

IV. Analysis

- The student will work independently to answer the following questions. Students may draw their answers
 - ❑ How does the circulatory system work?
 - ❑ How do people get heart disease?
 - ❑ How easy or difficult is it to keep the heart healthy?
 - ❑ Why are there people who continue to live risky (for their health) lifestyles?

V. Application

1. Review: answer study notes worksheet
2. Brainstorm Carousel: Students will brainstorm ideas on keeping the systems of the body healthy. (This could be done before or after tackling all the systems of the body. If done before, remember to go back to the list at the end of the topics so that students can check if their ideas were correct, and add more ideas based on what they had learned. If done after, this can be a review/ test.)
 - ❑ Teacher posts five manila papers around the room. Each manila paper is labeled with one body system: urinary, circulatory, musculo-skeletal, digestive, respiratory.
 - ❑ Create five groups. Each group will have a different colored marker. Each group will stand in front of a manila paper. There should be a designated writer (group mates can just dictate what to write).
 - ❑ Upon the signal of the teacher, each group will list down as many ideas as they can in 20 seconds.
 - ❑ After 20 seconds, all groups will move to the right. For the succeeding rounds, keep adding 10 seconds to the clock so the groups will have time to read what is already written.

Student will pick out a method from the manila papers. Method should

be something student can realistically accomplish. Student signs a contract with their teacher and classmates: "I will keep my body healthy by _____. If I know an unhealthy person, I will teach him/her the things I learned in this class."

STUDY NOTES: THE CIRCULATORY SYSTEM

- 1-2. The _____ pumps _____ throughout the body.
- 3-4. The heart is a _____ that has _____ pumps.
5. The top chambers on each side are called the _____.
6. The bottom chambers are called the _____.
- 7-8. The _____ pumps blood to the _____ for fresh oxygen.
9. The _____ pumps blood to the entire body.
10. The _____ carry the deoxygenated blood back to the heart.
11. The _____ carry fresh blood to the body.
12. The word _____ describes things that have to do with the heart.

DRUG ABUSE AND HOW TO PREVENT IT

(Grade 6, Science and Health: Substance use and abuse)

- I. Objective: At the end of the lesson the pupil should be able to—
- Explain what s/he thinks and feels about current news on the drug situation.
 - Summarize what s/he learned about drug education through the use of symbols.
 - Compare his/her group's values with that of others.

Culminating Activity: Summary of the Unit

II. Materials: cartolina and crayons for each group

III. Procedure

Daily Health News

Pupils share Health news related to Drug Education. They present their

news and end it with an “I think...What do you think?” statement.

Word Association

Say a word and quickly point to a pupil who should say what s/he associates with the word. This should be done briskly so that the pupils would say the first thing that comes to their minds as soon as they hear the word.

Sample words: family, drug, medicine, problem, mother, skill, hobby, children, love father, feel role, abuse, communicate, social, happy, drug

Coat of Arms

Introduction: “In the days of old, our forefathers use shields to protect them in battle. In Europe, the soldiers’ shields were decorated with their coat of arms, which showed their background, beliefs, and family characteristics.

“Your group will form a family and design your own coat of arms.”

Instructions: Draw a coat of arms with four sections. On each section, answer the corresponding question with illustrations/ symbols. Don’t write any word. Discuss among yourselves your answer to each question. Be sure that each one in the group agrees to each answer.

Section 1: What kind of a family will not likely have any drug abuse problem?

Section 2: How can parents prevent drug abuse in their family?

Section 3: What can children do to prevent drug abuse?

Section 4: What is the most important skill that you should develop to prevent drug abuse?

Choose a name for your family. The name should show what your family values most.

Gallery Walk

The finished coat of arms will be posted on the wall of the room and the whole class will “take a walk” to view them.

Presentation

Each group will present its coat of arms and explain its meaning. Every group should also share the experiences of its members while working on the coat of arms.

IV. Evaluation

Share a one-word feeling about drug education. Give your observation to the class.

POPULATION AND ITS IMPACT ON THE HEALTH OF THE COMMUNITY AND ENVIRONMENT

(Grade 6 or High School, Social Studies: Family Health)

I. Objective:

- Understand the link between people's activities and their concomitant effect on health and the environment
- Evaluate the impact of overpopulation on the environment and the succeeding effects on people's lives (general well being—physical, emotional, mental, social)

II. Materials: Pen and paper; Tape recorder (optional)

III. Procedure:

Survey and Interview

1. Students will conduct a survey of their neighborhood, as well as interview 10 neighbors. Teacher will guide the students in planning for the survey and interview.
2. Interview techniques (to be taken up in English class)—Students will learn interview techniques – how to talk to people, how to ask follow up questions
3. Students learn observation techniques and how to note their observations. This will be useful when they take a survey of their community (to be taken up in either English or Science class).
4. Crafting questions: “What do I want to know about the people in the community?”

Teacher guides students in crafting their interview questions (do not be limited with the samples provided)

- ☐ When did the family arrive in the community?
 - ☐ If they came from the province, why did they decide to come to the city?
 - ☐ How is their life in the city – happy, problematic, satisfactory?
 - ☐ What are the major problems they encounter on a daily basis?
 - ☐ What makes them happy?
5. Survey form could include, but are not limited to the following:
 - ☐ Number of people in the family (adults and children)
 - ☐ Monthly income
 - ☐ Monthly expenses (itemize large expenses)
 - ☐ Number of times people in the family get sick
 - ☐ Types of illnesses encountered in the past year (coughs and colds, fever, sore eyes, sore throat, etc.)
 6. Observation form could include but are not limited to the following:

- ❑ Description of the surroundings / community
- ❑ Description of the respondents' residences
- ❑ Description of activities happening in the community during the visit (barangay cleaners sweeping street; children playing in the street; toddlers playing with canal water; teenagers singing karaoke at the corner, etc.)

IV. Analysis

Group discussion in class: Remind students that inferences are just guesses and they should not judge people based on their assumptions. Remind them also that they visited the community only once so there are many more stories that they haven't heard, which means they have only scratched the surface of the people they have met.

- What can students infer about the people in the community based on their observations?
- Compare and contrast each other's observations and inferences.
- Compare the observations with the results of the survey and answers to the interview.
- Were there inferences proven accurate/ nearly accurate?
- What can they predict about the future of the people in the community given their analysis of the situation?

Individual work: Essay

Hope to find the following "conclusions" in children's essays: (1) When there are too many people in the family, there are less resources to go around. When there are less resources, the family starts to suffer – no access to health care, sanitation, proper nutrition, etc. (2) Whatever people do to the environment will redound to the people living in that environment – if people make the environment dirty, those same people will be the ones to get sick.

- Students will write an essay explaining the links between people, people's health, environment, community activities. Guide questions may include, but are not limited to:
 - ❑ What happens when there are too many people in the family?
 - ❑ What is the relationship between people's health and community conditions?
 - ❑ Why do people opt to move to the city instead of staying in the province?

V. Application: students will create an action plan that they can fulfill

- What can students like you do to improve the conditions in your community?
 - ❑ Encourage all my friends in the neighborhood not to litter.
 - ❑ Go back to the households I interviewed to encourage them to

- reuse, reduce, recycle.
- ☐ Learn more about how to keep my environment healthy – to prevent dengue, sore eyes, measles, TB.
- ☐ Teacher should follow up on the action plan.

BUYING GROCERIES FOR TWO PEOPLE FOR ONE WEEK

(High School, Home Economics or its equivalent: Consumer Health, Nutrition)

I. Objectives:

- Teach students to use a simple food budget for two
- Teach students to comparison shop
- Teach (or remind) students to include the basic four food groups daily
- Teach (or remind) students about calorie content of common food.

II. Materials: Regular notebook paper, scissors, paste or scotch tape, calculator, a list of prices from the market or the grocery store (to be compiled by students the weekend before this lesson)

III. Procedures

1. Students should have been assigned to go to the market or grocery store with their parents to list down prices of meat, vegetables, canned goods, and everything else they buy. An average price range would suffice e.g. a bag of chips usually cost between P5 to P20.
2. In class, discuss the importance of good diets and of staying within a food budget. This may include asking each student for a favorite food and finding out how many choices are home-cooked and how many are “fast food or junk food” Ask the students if they have any idea how nutritious their favorite food is—or how much of a “junk-food item” it really is!
2. Other questions could center around how much money is spent on eating out in a typical week, and how much of a person’s total income can be budgeted for food. Discussion can revolve around school cafeteria food and what they purchase outside the school. (The possibilities are endless.)
 - ☐ An optional activity is to find out how much money people in other countries spend on food. Look for the percentage of food expense vs. a person’s income. For example, China’s minimum wage is enough for a person to rent an apartment, have food, clean water,

and even have their clothes laundered. One factor is that food eats up only 8%-10% of a person's monthly income.

3. Activity:

- Group students into four to six per group.
- Each group has approximately "P500." They will "shop" for one week's worth food using their lists. Each student is to "spend" his or her P500 in a way that is nutritious and varied, remembering that he/she is shopping for two.
- Hand out pages of information on the basic four food groups and sample calorie amounts for an adult portion of common food. A lot or a little discussion may be needed at this point, depending on the students' background in food preparation and living on their own.
- Students survey their lists and compare this with the four basic food groups. Group will look for meat such as fish at P80 to P100 per kilo; bananas at P20 for four to five pieces; milk at P50 per 100 grams, etc.
- Students keep a running list of money spent. When they have spent approximately P500, they double check to see that each food group is represented every day in approximately ideal amounts.
- After the activity, students approximate the number of calories for each meal per person comparing the number of calories to an ideal number for a young, active adult and adjust accordingly.

4. Tying it all together:

- At the conclusion of the lesson, the student will turn in their shopping list, cost analysis and calorie analysis.
- The students can share their findings. Were they surprised by how expensive food was or how cheap? Did they improve their awareness of calories and menus? etc. Is there money left over for an occasional burger?

IV. Application:

- Find or invent tasty recipes, varying the number of calories consumed to provide a person on a diet to lose weight or to gain weight, or finding ways to save money without compromising nutrition.
- Other ideas include: a student pamphlet with recipes and accompanying calorie list; an article for the student newspaper; a bulletin board

FIRE SAFETY

(Grade 4: Safety and First Aid)

I. Objectives: At the end of the lesson, the pupil should be able to—

- Practice safety precautions in using fuel/fire;
- Follow safety rules in case of fire;
- Follow emergency procedures in case of fire.

II. Content

- A. Safety precautions in using fuel/fire
- B. Safety rules in using fire
- C. Emergency procedures in case of fire

III. Materials

Activity 1: Stories printed on paper (one copy per child)

Activity 2: stove, matches, Barbecue grill, matches, camote or banana on sticks, coal

Wood for campfire lay, wood shavings, candle, bonfire

Toy telephone

Evaluation: three sheets of bond paper and one box of crayons per child,

IV. Procedure:

1. Opener. What things in the home can cause fire (flammable things)?
How can each cause fire?
2. Activity 1
 - *Story reading or storytelling.* Let the children read a copy of the story or tell the story to the children. (see story on next page)
 - *Story analysis*
 - » What do you think happened to the De la Cruz family?
 - » How do you think did it happen?
 - » What unsafe practice did Dodong do?
 - » What unhealthy practice did his older brother do?

 - » What do you think happened to the Magumparo family?
 - » How do you think did it happen?
 - » What unsafe practice did Alia do that could have started the fire?
 - » What unhealthy practice did Alia do?

 - » What do you think happened to the Marcoses?
 - » How do you think did it happen?
 - » What unsafe practice did Mrs. Marcos do?
 - » What unhealthy practice did Mrs. Marcos do?

 - » What do you think happened to the Molinos?

FIRE!

Little Dodong de la Cruz liked to play with his older brother's cigarette lighter. His brother Rod didn't mind.



It was Alia Magumparo's responsibility to sweep their yard. She made a pile of dry leaves and burned them. Then she left it and started playing with her neighbors.

After their evening prayer, Mrs. Molino left two candles burning on their altar. It was an offering for her dead parents.



Even with their mosquito net, the Marcos' baby was still bitten by the flying insects. So, Mrs. Marcos lighted a mosquito coil and put it near the baby's crib before going to sleep.

That year the de la Cruzes, Magumparos, Marcoses, and Molinos were all written about in the newspapers. Too bad not all of them were still around to read them.

What do you think happened?

- » How do you think did it happen?
- » What unsafe practice did Mrs. Molino do?
- » How can one honor dead relatives in a safer way?

3. Activity 2

- *Demonstrations.* Prepare five learning stations. Invite five adults (can be parents) to man a station each. They will demonstrate how to—
 - » Station 1: Light a stove with matches
 - » Station 2: Be safe when cooking outside, e.g. barbecue
 - » Station 3: Make a campfire and bonfire and how to put out the fire (A Scout Leader can be invited to demonstrate this.)
 - » Station 4: How to get out of your room and your house when it is on fire.
 - » Station 5: How to report a fire. (Have the phone number of the local Fire station handy. A student will play the part of the telephone operator and another the caller.
- Divide the class into five groups. Each group will take turns learning the activity in each station. After 15 minutes, blow the whistle so that the each group can move to the next station. See that each child in the group has a chance to demonstrate.

V. Analysis

1. Why is it important to strike a match away from your body?
2. How can you control the fire when cooking outside?
3. Which is more dangerous: campfire or bonfire?
4. How will you manage the fire in both?
5. Why is it important to have a planned escape route from you home in case of a fire?
6. Why should you have at least two escape routes planned?
7. What information should you give over the phone in case of a fire?

VI. Abstraction

- How can we prevent fire in the home? School?
- What rules should we follow in handling things that can cause fire?
- What should we do when there is fire?

VII. Application

- Make a fire exit plan for your bedroom. Make two plans on coupon bond—exit commonly used, emergency exit. Student are to show these routes on their drawings, using different colored arrows for the two routes. Each pupil should be able to explain why the routes are the best ones to use in case of a home fire.
- Participate in a school fire drill. Pay attention to teacher's instructions before the fire drill.

VIII. Evaluation

- Demonstrate what to do:
Gilda is alone in their house. She goes out of her bedroom and sees flames coming from her sister's bedroom. The flames are between Gilda and the stairs. What should Gilda do?
- Assign children to play the role of parents and children. Have them dramatize what they will do if there is fire in their home. Position the family members in different places in the "house." Put a marker where the fire is.
- Make a poster or slogan about fire prevention at home and in school.