HEALTH EDUCATION COURSE, CHAPTER 1 - PART 1: SERVING CHILDREN'S HEALTH*

Fred Mednick

This work is produced by OpenStax-CNX and licensed under the Creative Commons Attribution License 2.0^\dagger

1 Healthy Children Can Learn

The United Nations Cyber Schoolbus tells us about essential issues surrounding health.

FACT:

Infectious diseases are the leading cause of death in the world. Of 52.2 million deaths in 1997, at least 17.3 million were due to infectious diseases.

FACT:

Thirty new diseases have been identified over the past 20 years, among them the deadly Ebola and HIV/AIDS.

FACT:

In the long history of struggle against infectious diseases, humans have only managed to conquer one: smallpox, which was declared eradicated in 1980.

HOPE:

Polio, already eliminated from the western hemisphere, is targeted for global eradication by the year 2000.

What will world health look like at the end of the millennium?

Who will be infected, who's likely to be safe? What is the relation between poverty and disease? Will we eradicate other diseases? What are these new viruses?

But wait, let's take it from the beginning. What are infectious diseases anyway? What are viruses and bacteria? How do we defend against them?

These small units of study shall provide you, the teacher, with some crucial information you need to be an effective caregiver for the children you teach.

2 Protection Against Insects - Mosquito Nets and Checking for Ticks

This site describes precautionary measures against malaria: Preventing Malaria¹

Mosquito Nets

Insect-borne infections, such as malaria, can be reduced 10-20 times by mosquito netting. An ideal mosquito net would have a mesh size of 1.2mmX1.2mm and be made of synthetic material or cotton. The

^{*}Version 1.3: Mar 17, 2006 12:10 pm +0000

[†]http://creativecommons.org/licenses/by/2.0/

¹http://www.aidworkers.net/exchange/20030528.html

net should be wide enough to cover the body but should not touch the body, as insects may then reach the skin through the mesh. The net should completely surround the human so that there are no open gaps through which the insects may enter. Holes should be checked for often, and the net should not be washed. If sprayed with insecticide every six months, the net is much more effective as it then kills any mosquitoes who do enter. For this reason, people already infected with insect-borne illnesses should spray insecticide on their mosquito nets every two weeks, as this will kill any mosquitoes that do feed off the infected bodies and become disease carriers. Permethrin is a safe insecticide that paralyzes mosquitos.

Ideally the nets should be impregnated with the insecticide and would last for six months.

Checking for Ticks

One advantage about ticks is that they do not fly; they can only attach themselves to humans who brush against them. Ticks are most likely to be found in grassy or shrubby areas. They are black and round. If in a tick-infested area, be sure to visually check everyone before leaving. Do not miss hidden places such as under the armpits, or behind the knees. If you find a tick, detach it immediately to prevent further penetration of the skin. If too resistant to hand plucking, use tweezers to pull it out. Then wash the surrounding skin with soap and water.

3 Protection Against Insects - Wearing Proper Clothes

Wearing Proper Clothing

The most effective protection from insects is wearing long sleeves and pants during feeding times. Anopheline mosquitoes, the carriers of malaria, bite from dusk to dawn, so protecting yourself during the day is most important. Those near stagnant water should be especially careful as the anopheline mosquitoes breed in water.

Where and When Insects are Most Active

Dusk and dawn are the most active time for insects, so protecting oneself is essential. Limit outdoor activities during these times and stay in protected areas if there are any. Avoid stale water, ditches, or any stagnant water as that is the breeding ground for the malaria-carrying mosquitoes.

Here are three resources that can help you learn more about mosquito-borne diseases, along with prevention:

- 1. http://www.mosquito-netting.com/
- 2. http://www.e-ticks.net/
- 3. http://www.malaria-prevention-info.com/

4 Protection Against Illness from Animals - Avoiding Dangerous Animals \hat{A}

5 Avoiding Snakes

Â

6 Contagious People

Â

7 Caution Against Mixing Body Fluids

Â

8 Sexual Safety

Â

9 Maintaining Good Hygiene

According to UNICEF, "more than half of all illnesses and deaths among young children are caused by germs that get into their mouths through food or water or dirty hands. Many of these germs come from human and animal faeces.

Many illnesses, especially diarrhoea, can be prevented by good hygiene practices: putting all faeces in a toilet or latrine; washing hands with soap and water or ash and water after defecating or handling children's faeces, and before feeding children or touching food; and ensuring that animal faeces are kept away from the house, paths, wells and children's play areas.

Everyone in the community needs to work together to build and use toilets and latrines, protect water sources, and safely dispose of waste water and garbage. It is important for governments to support communities by providing information on low-cost latrines and toilet facilities that all families can afford. In urban areas, government support is needed for low-cost sanitation and drainage systems, improved drinking water supply, and garbage collection.

A Dirty Face

A dirty face attracts flies, spreading the germs they carry from person to person. The eyes may become sore or infected and vision may be impaired or lost if the eyes are not kept clean and healthy.

If the eyes are healthy, the white part is clear, the eyes are moist and shiny, and vision is sharp. If the eyes are extremely dry or very red and sore, if there is a discharge or if there is difficulty seeing, then the child should be examined by a health worker as soon as possible.

10 Avoiding Standing Water

Â

11 Importance of Boiling Water

Â

12 Keeping the Food Area Clean

Â

13 Girardia

Â

14 Human Waste

Â

15 Nutrition

Â

16 Food Preparation and Care

Cooking food thoroughly kills germs. Food, especially meat and poultry, should be cooked all the way through.

Germs grow quickly in warm food. Food should be eaten as soon as possible after cooking so it does not have time to collect germs.

If food has to be kept for more than two hours, it should be kept either very hot or very cool.

If cooked food is saved for another meal, it should be covered to keep off flies and insects and then thoroughly reheated before being eaten.

Yogurt and sour porridge are good to use in meals because their acid prevents the growth of germs.

Raw food, especially poultry and seafood, usually contains germs. Cooked food can collect germs if it touches raw food. So raw and cooked foods should always be kept away from each other. Knives, chopping boards and surfaces where food is prepared should always be cleaned after preparing raw food.

Breastmilk is the safest milk for infants and young children. Animal milk that is freshly boiled or pasteurized is safer than unboiled milk.

Expressed breastmilk can be stored at room temperature for up to eight hours in a clean, covered container.

Special care should be taken with preparing food for infants and small children. Their food should be freshly made and not left standing, if possible.

Fruit and vegetables should be peeled or washed thoroughly with clean water, especially if they are to be given raw to babies or small children. Chemicals such as pesticides and herbicides cannot be seen on fruit and vegetables but nonetheless can be dangerous.

Germs on food can be swallowed and cause illness. To protect food from germs:

1. food preparation surfaces should be kept clean

- 2. knives, cooking utensils, pots and plates should be kept clean and covered
- 3. cloths for cleaning dishes or pans should be washed thoroughly every day and dried in the sun. Plates, utensils and pans should be washed immediately after eating and put on a rack to dry
- 4. food should be kept in covered containers to protect it from insects and animals
- 5. feeding bottles or teats should not be used because they can contain germs that cause diarrhoea unless they are cleaned each time with boiling water. Children should be breastfed or fed from a clean, open cup.

17 Washing Hands

Â

18 Drinking Fresh Water

Families have fewer illnesses when they have an adequate supply of clean water and know how to keep it free of germs.

If the water is not clean it can be purified by boiling or filtering.

Clean water sources include properly constructed and maintained piped systems, tube-wells, protected dug wells and springs. Water from unsafe sources - such as ponds, rivers, open tanks and step-wells - can be made safer by boiling. Water should be stored in a covered container to keep it clean.

Families and communities can protect their water supply by:

- 1. keeping wells covered and installing a handpump
- 2. disposing of faeces and waste water (especially from latrines and household cleaning) well away from any water source used for cooking, drinking or washing
- 3. building latrines at least 15 metres away and downhill from a water source

- 4. always keeping buckets, ropes and jars used to collect and store water as clean as possible by storing them in a clean place, rather than on the ground
- 5. keeping animals away from drinking water sources and family living areas
- 6. avoiding the use of pesticides or chemicals anywhere near a water source.

Families can keep water clean in the home by:

- 1. storing drinking water in a clean, covered container
- 2. avoid touching clean water with unclean hands
- 3. taking water out of the container with a clean ladle or cup
- 4. having a tap on the water container
- 5. not allowing anyone to put their hands into the container or to drink directly from it
- 6. keeping animals away from stored water.

If there is uncertainty about the safety of the drinking water, local authorities should be consulted.

19 Cleaning Food

Â

20 Avoiding Animal Contact with Food

Â

21 Preserving Food

Â

22 Most Vital Immunizations

What are immunizations?

Immunizations, also called vaccinations, are given to protect you from diseases. Each vaccine contains small amounts of a weakened disease organism or its products, which usually are given by injection. Your immune system develops antibodies to fight the disease, which then recognize and attack the organisms if you are exposed to them in the future. Sometimes an immunization does not completely prevent the disease, but it will significantly reduce its severity. Some immunizations are given only once, while others require several treatments over a period of time.

Why get immunized?

There are several reasons to keep childrens' immunizations current:

- Being immunized protects you. Diseases still exist and can infect anyone who has not been vaccinated.
- Being immunized protects those around you. A small number of people cannot be immunized because they have other health problems, such as severe allergies. This leaves them susceptible to diseases. Others are not protected from diseases because they do not develop immunity after having vaccinations. If most people are immunized, it reduces the chance of these nonimmune people contracting the disease.
- Immunizations cost very little-much less than treating the illnesses they prevent. The risks are low. Reactions to immunizations are usually mild and don't last long.
- Immunizations reduce the risk of epidemics.

What immunizations are recommended?

The standard immunization schedule includes vaccines for:

• Diphtheria, pertussis, and tetanus (DTaP).

- Polio (inactivated poliovirus vaccine, or IPV).
- Measles, mumps, and rubella (MMR).
- Chickenpox (varicella).
- Hepatitis B (Hep B).
- Hepatitis A (Hep A).
- Haemophilus influenzae type b (Hib).
- Pneumococcal vaccine (PCV) for children younger than 2 years of age.
- Influenza.

The standard immunization schedule begins at birth. Immunizations are spaced throughout a baby's first 18 months; some are repeated between the ages of 4 and 6. Very few immunizations are needed after this age-just those given yearly (such as a flu shot) or on a regular basis throughout adulthood (such as a tetanus shot).

All immunizations should be kept up-to-date. Additional vaccinations may be needed when traveling to certain parts of the world.

What reactions may result from being immunized? Minor side effects

Side effects from vaccines are generally minor, if they occur at all. They may include:

- Redness, mild swelling, or soreness where the shot was given.
- Slight fever.
- Drowsiness, irritability, and poor appetite in some babies.
- A mild rash 7 to 14 days after chickenpox or MMR immunization.
- Temporary joint pain after the MMR vaccine.

Severe side effects

More serious side effects occur very rarely. The risk of a serious complication from a disease is far greater than the risk from a vaccine.

Research is currently under way to better understand which reactions may be caused by vaccines and how to reduce even further the already low risk of complications.

Severe reactions to immunizations, such as a very high fever [over $104.5 \hat{A} \,^{\circ}\text{F} \, (40.28 \hat{A} \,^{\circ}\text{C})$] or difficulty breathing, are rare. If you or your child has an unusual reaction, notify your health professional.

How effective are immunizations at preventing disease?

Although no vaccine is 100% effective, most routine childhood immunizations are effective for 85% to 95% of the children who receive them.

Some people do not develop complete immunity even when they have had the vaccine. If these people are exposed to the disease, they are likely to become infected. However, symptoms are usually milder as a result of having had the vaccine.

Can vaccines cause other diseases?

Some people have voiced concern about vaccines that contain thimerosal, a mercury compound additive that kills bacteria.

Some people believe that the thimerosal or other components of the measles-mumps-rubella (MMR) vaccine can cause autism. Symptoms of autism often are first noticed around 1 year of age. Because children also receive the MMR vaccine around their first birthday, some people assume there is a link. However, recent studies have found no scientific proof linking adverse effects (such as autism) with thimerosal.

Measles, mumps, and rubella are potentially serious diseases that can cause permanent damage and disability to a child, possibly even death 2, 3 A child who does not have the MMR vaccine is at a much greater risk for developing measles, mumps, or rubella than he or she is for developing autism.

Should I get additional immunizations for protection against possible bioterrorism?

The possibility that biological weapons exist has alarmed many people. In response to the potential threat of these weapons, the U.S. Centers for Disease Control and Prevention (CDC) recommends vaccinations for some people against anthrax and smallpox.

Anthrax recommendation

Anthrax vaccinations are recommended for some laboratory workers, people who work with animals imported from locations without adequate safety standards (such as veterinarians who travel to work in other countries), and certain military personnel. Pregnant women in any of these categories should be vaccinated only if necessary. Anthrax vaccination is not recommended for the general public because of their low risk of infection, and because supplies of the vaccine are very limited.

Smallpox recommendation

Smallpox vaccination recommendations are under review. At this time, vaccination is not recommended for the general public. The U.S. government recommends the vaccine for:

• Laboratory workers who directly handle cultures or animals contaminated or infected with viruses in the same family as smallpox.