Infection Prevention Education

Caregiver Training Guide

Standards:

Caregivers/staff will be able to:

1. Understand that disease can spread rapidly in crowded areas
2. Understand signs/symptoms of infectious diseases and how they can harm children
3. Explain immediate interventions and treatments for infectious diseases
4. Explain benefits of health practices that prevent the spread of infectious diseases
   - Hand washing
   - Immunizations
   - Disposal of waste (human and solid)
   - Food preparation
   - Safe drinking water
   - Separating the ill from others
5. Understand ways to encourage health practices that prevent the spread of infectious diseases among children

Infectious disease in children: infectious diseases are among leading causes of pediatric morbidity and mortality around the world. Because children are developing, and their bodies are immature, they are at an increased risk for short and long-term effects of infectious diseases including dehydration, malnutrition, and organ damage. As caregivers, knowing information about infectious diseases and how to prevent them can help to prevent illness in children and keep them happy and healthy.

Signs/symptoms: when children have an infection, they experience a variety of signs and symptoms.

- Coughs, colds, and more: coughs, colds, sore throats, runny noses, itchy eyes, and ear aches are common in children and usually they are not cause for serious concern. Sometimes, however, these symptoms can indicate more serious infections. These infections are caused by germs that enter our bodies through our ears, nose, and mouth and cause damage. Examples of infections include tonsillitis, pneumonia, tuberculosis, ear infections, conjunctivitis, and the flu.
    - Symptoms requiring treatment by a medical professional: breathing rapidly or having difficulty breathing; prolonged cough that persists for more than 3 weeks; trouble swallowing, especially if also drooling; stiff neck; fever (101-104 F) that doesn't decrease with ibuprofen or paracetamol; refusal to drink or drinking much less than normal; severe pain anywhere; severe fatigue and decreased activity; combination of rash, headache, stomach ache, or vomiting with a sore throat; and discharge from the eye or ear.
    - Caring for the child: keep the child warm and encourage eating and drinking as much as possible. Cold liquids or cold foods are good – it is important to make sure that they are drinking to prevent dehydration. Paracetamol or ibuprofen can help as well – ask the doctor for the proper dosing and timing. Cool or warm mist and warm compresses can help with comfort. Rest and fluids are the most important.
- Stomach infections: stomach infections are serious illnesses in children because they often cause diarrhea. Diarrhea is dangerous because the immature bodies of children lead them to becoming dehydrated and malnourished more quickly because diarrhea drains liquid from the body. Stomach infections are caused by germs that are ingested, especially germs from feces. These germs can be viruses, bacteria, or parasites. This happens most often when there is unsafe disposal of feces, poor hygiene practices, and lack of clean drinking water. Examples of stomach illnesses include cholera, typhoid fever, parasites, salmonella, and food poisoning. It is important to note that sometimes stomach illness can be due to a non-infectious disease or condition such as a food allergy or diseases of the intestinal tract and in this case the child will also need medical attention.
    - Symptoms requiring treatment: Any stomach illness causing diarrhea in a child should be taken seriously because of the risks for complications. Diarrhea consists of frequent watery stools and often starts with crampy abdominal pain. Other symptoms that can occur with stomach infections include fever, loss of appetite, nausea, vomiting, and weight loss. A child is severely sick if she or he has several

watery stools within an hour or if there is blood in the stool – this requires immediate help from a trained health worker.
    - Caring for the child: as soon as diarrhea starts, children need treatment with extra fluids along with regular foods and fluids in order to prevent complications. When taken to a medical professional, the child will likely be prescribed oral rehydration salts (ORS) solution and a daily zinc supplement for 10-14 days. Diarrhea medications are generally ineffective and can be harmful.
- Skin infections: children are very susceptible to skin infections due to an immature immune system and their tendency to want to touch other people and objects. Skin infections are caused by bacteria, viruses, parasites, and environmental conditions. Skin infections occur when germs enter onto our skin or in an open wound and cause infection by disturbing the skin. Examples of skin infections include lice, scabies, ringworm, chicken pox, impetigo, hives, and warts.
    - Symptoms requiring treatment: symptoms of skin infections include itchy skin, rash, pustules on skin, warm and reddened areas of skin, swollen areas of skin, blisters, and painful areas of skin. The child should be taken to a medical professional if the skin symptoms keep him or her from participating in daily activities, cause serious pain, are occurring concurrently with a fever, have not faded in 3 days, or you suspect a specific infection.
    - Caring for the child: when caring for a child with a skin infection it is important every day to check the site for any changes in size or characteristics, clean the area, and cover the area with a bandage. When cleaning the infected skin, soak the area in warm water for at least 15 minutes. You can use a small amount of soap to clean around the infected skin and use a soft clean cloth to wipe away any pus or blood from the infected area. Pat the area dry with a clean cloth and cover it with a clean dressing to help it heal. Washing the child's clothes and sheets and toys that touched the infected area is important to prevent further spread.

Interventions and treatments: when visiting a medical professional for an infection there are some common treatments that may be prescribed. For many illnesses medications may be needed including antibiotics, antivirals, antiparasitic medicines, antifungals, and pain medication. Other treatments include rest, nebulizer treatments, rehydration solutions, diet changes, and comfort measures such as warm compresses, salt water gargles, cold fluids, and saline rinses. It is important to closely follow the instructions of the medical professional closely in order to help the child heal and feel better.

Types of infections in children

Category	Symptoms	Examples
Coughs, colds, and more 	Cough, fever, aches (head, ear, throat), eye or ear discharge, difficulty swallowing, difficulty breathing - Symptoms requiring treatment: rapid/difficult breathing; prolonged cough > 3 weeks; trouble swallowing; stiff neck; fever (101-104 F) that doesn't decrease with ibuprofen or paracetamol; severe pain anywhere; severe fatigue and decreased activity	tonsillitis, pneumonia, tuberculosis, ear infections, conjunctivitis, common cold, flu
Stomach infections 	Diarrhea, fever, loss of appetite, nausea, vomiting, weight loss, dehydration - Symptoms requiring treatment: several watery stools within an hour or if there is blood in the stool; severe vomiting	cholera, gastroenteritis, typhoid fever, parasites, salmonella and food poisoning
Skin infections 	Itchy skin, rash, pustules on skin, red and warm areas of skin, inflammation - Symptoms requiring treatment: skin symptoms keep the child from participating in daily activities, cause serious pain, are occurring concurrently with a fever, have not faded in 3 days, or cause you to suspect a specific infection	lice, scabies, ringworm, varicella, impetigo, la urticaria, warts

How diseases occur: Pathogens, or microorganisms that are capable of causing disease, usually enter our bodies through the eyes, mouth, nose, or urogenital openings, or through wounds or bites that breach the skin barrier. When a pathogen enters into our body it is capable of causing illness by releasing toxins, multiplying and overwhelming normal cells, damaging cells, or by acting as parasites and consuming our bodies nutrients and these actions cause symptoms of illness by disrupting our body's normal functioning. Our immune system works to fight off the pathogen and eliminate it and this also causes many symptoms of illness such as fever, fatigue, malaise, and pain. If our immune system becomes overwhelmed, more serious illness can occur. Infectious disease can be spread through a variety of ways:

- Airborne: infectious disease can be spread through the air in droplets that are released when a person coughs or sneezes – these tiny droplets can travel up to 6 feet and can spread germs by landing on surfaces or in another person's eyes, nose or mouth. In rare cases, remains of the small droplets can be suspended in the air for hours and then may be carried by air currents farther away and other people may breathe in these droplets.
- Contact (direct/person-person or indirect): germs can be spread through contact either directly/person-person or indirectly through contact with the environment (objects, animals, insects, food, water). Direct contact occurs when people shake hands, hug, or kiss. Indirect contact occurs when people come in contact with something that already has germs on it and then introduce those germs into their own body such as by touching a doorknob and then touching their eyes, nose or mouth or by sharing dishes and utensils with other people.
    - Bodily fluids: a sub-type of contact spread is through contact with bodily fluids. Bodily fluids include urine, saliva, breastmilk, semen and vaginal secretions. People come in contact with bodily fluids primarily during sexual intercourse and through contaminated needles (such as for IV drug use or tattoos).
    - Food and water: another sub-type of contact spread is through consumption of food and water. germs can also be spread through the ingestion of food and water contaminated with bacteria, viruses, parasites, and toxins.

*Infectious diseases can especially spread in crowded and congested areas such as in communal areas, thus understanding how diseases spread and strategies to prevent the spread of disease is especially important in these areas.

1. Pathogens (microorganisms that can cause illnesses) in the environment enter our bodies through various routes (mouth, eyes, ears, nose, urinary tract, insects, and wounds)






2. The pathogen can cause illness by liberating toxins, multiplying and disrupting normal cellular functioning, damaging cells, or acting as parasites and consuming body nutrients

3. Our immune system works to fight the pathogen and eliminate it

4. Symptoms of illness (fever, fatigue, general malaise, pain)



How to prevent the spread of disease: The good news is that infections are highly preventable and there are a variety of methods for preventing the spread of disease. It is important to prevent pathogens from entering our body as much as possible in order to prevent illness.

Immunizations: many serious infections can be prevented through immunizations including measles, meningitis, diphtheria, tetanus, pertussis, yellow fever, polio, and hepatitis B. Children who are immunized are protected from these serious illnesses which can lead to disability or death. Every child should complete the recommended series of immunizations and those that occur in the first 2 years of life are especially important. Work with health care professionals to ensure all children in your care are up to date on their vaccinations.

WHO Recommended Immunization Schedule

At birth	BCG, Hepatitis B, Polio
6 weeks	DTP, Polio, Hepatitis B, HIB, Pneumococcal, Rotavirus
10 weeks	DTP, Polio, Hepatitis B, HIB, Pneumococcal, Rotavirus
14 weeks	DTP, Polio, Hepatitis B, HIB, Pneumococcal, Rotavirus
9-12 months	Measles, Rubella
After 9 years old	HPV

Proper water, sanitation, and hygiene: children are more vulnerable to the negative effects of unsafe water, poor sanitation, and lack of hygiene. Clean water and good sanitation are important to preventing children from being exposed to infectious agents. Drinking water should be filtered, chlorinated, disinfected with sunlight or boiled before consumption. All feces should be disposed of safely in either a toilet or buried outside. Proper hygiene is key to reducing exposure to infectious agents and preventing infections as well. Proper hygiene includes hand washing with soap and water (after using the bathroom, before preparing or eating food, after working outside or doing dirty tasks, after blowing your nose/coughing/sneezing, after touching a pet, and after caring for a sick person), brushing and flossing teeth, bathing regularly, cutting fingernails and toenails, covering coughs and sneezes, cleaning clothes and towels, cleaning toys and household objects, maintaining a clean living space, and disposing of garbage properly.

Food preparation: proper food preparation is an important way to prevent foodborne illness. 4 simple steps to preventing foodborne illness:

- Clean: wash your hands and surfaces often – wash hands with soap and water before, during, and after preparing food and before eating. Wash your utensils, cutting boards, and countertops with hot, soapy, water. Rinse fresh fruits and vegetables under running water (soap may be used here as well).
- Separate: don't cross-contaminate – raw meat, poultry, seafood and eggs can spread germs to ready-to-eat foods unless you keep them separate. Use separate cutting boards and plates for raw meat, poultry, and seafood and keep these foods separate from all other foods in the fridge.
- Cook: to the right temperature – food is safely cooked when the internal temperature is high enough to kill the germs that can make us sick. Use a food thermometer and look at food color and texture to ensure it is cooked enough.
- Chill: refrigerate properly – keep the refrigerator below 40 F (4 C) and know when to throw food out. Refrigerate perishable food within 2 hours and thaw frozen food safely in the refrigerator, in cold water, or in the microwave.

(USDA Food Safety and Inspection Service)

Separating the ill from others: because illness can easily spread to others, it is important to separate children who are ill from others. This includes staying home from school and avoiding contact with other children during the contagious period of the illness.

Breastfeeding: when possible, breastfeeding babies exclusively for the first six months of life is an excellent way to protect babies and young children against dangerous illnesses. Breastmilk contains antibodies and nutrients that strengthen the child's immune system and protect the baby from many illnesses, especially diarrheal disease.

Wound care: proper wound care when children get cuts and scratches is an important way to prevent local infections that can also spread to other parts of the body. Anything that breaks the skin is a wound because when the skin is broken there is a risk of germs getting into the body and causing an infection. First, stop the bleeding by applying direct pressure with clean gauze or cloth over the site for 5-10 minutes. Once the bleeding stops gently wash the wound with soap and water for 5 minutes or soak the wound in warm water. After cleaning, apply a small amount of antibacterial ointment to keep the wound moist and cover it with a dry gauze or bandage until healed.

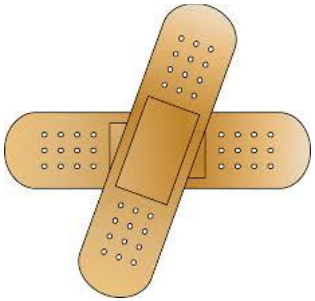
- When to see a medical professional: cuts that go all of the way through the skin and gaping open cuts may require stitches. Follow your instincts for when a child needs medical attention for a bad wound.

1. Stop the bleeding

2. Clean the wound

3. Apply ointment

4. Cover the wound



Encouraging infection prevention practices among children: As caregivers, it is important to help children learn about infection prevention practices by regularly talking about them, modeling them, and encouraging them. This especially includes hand washing. By regularly reinforcing infection prevention practices that children have learned, this helps to create healthy habits they don't need to think of that will aid children in staying healthy throughout their lives.

Resources

United Nations Children's Fund. (2010). Facts for Life (4th ed.). New York, NY: UNICEF.