

## Chapter 11

### COMMUNICABLE DISEASES

- ♦ Communicable Disease
- ♦ Reportable Diseases List
- ♦ Chickenpox
- ♦ Fifth Disease (Erythema Infectiosum)
- ♦ Infectious Hepatitis (Hepatitis A)
- ♦ Hepatitis B
- ♦ Impetigo
- ♦ Measles (Rubella, Red Measles, 10 day Measles, Hard Measles)
- ♦ Mononucleosis
- ♦ Mumps
- ♦ Pink Eye (Conjunctivitis)
- ♦ Pinworms
- ♦ Ringworm
- ♦ Rubella (German Measles, 3 day Measles)
- ♦ Scabies
- ♦ Scarlet Fever

### COMMUNICABLE DISEASE

Communicable diseases are those diseases which may be transmitted from person to person. (When a communicable disease is suspected, please keep in mind that this is a **confidential** matter.)

*Communicable disease can be transmitted via any of the following routes:*

- Direct contact with infected individuals or body fluids.
- Contact with contaminated objects such as clothing, bed linen, equipment, or other belongings.
- Droplet spread by coughing, sneezing, or talking.
- Airborne dust/particles or moisture in the air.
- Contaminated food and water.

*Some of the following signs and symptoms may indicate the beginning of a communicable disease:*

- |                      |            |                              |
|----------------------|------------|------------------------------|
| • Fever (over 100.4) | • Jaundice | • Red and/or draining eye(s) |
| • Chills             | • Nausea   | • Sore throat                |
| • Cough              | • Pain     | • Stiff neck with fever      |
| • Headache           | • Rash     | • Vomiting                   |

## Controlling Communicable Disease in Schools

Any person who is suspected of having a communicable disease should be excluded from school by the principal. The student will need to remain in the health room, isolated, if possible, until arrangements are made for him/her to be taken home.

### **In addition:**

When available, the professional judgment of the RN shall be used to determine the exclusion/readmission to school, based on established protocols, in accordance with standard medical procedures and practice. **A written statement from the student's licensed health care provider that the person is free from communicable disease is required for readmission to school.** If parent/guardian identifies Chickenpox, no note from doctor is required but student may not return to school until all lesions are dried to the crust stage.

### ***Persons at increased risk for complications include:***

- Individuals with immune system disorders.
- Individuals with sickle cell disease.
- Individuals on steroid therapy.
- Individuals on chemotherapy.
- Individuals who are organ transplant recipients.
- Individuals with tracheostomies.

# CHICKENPOX



## Signs and Symptoms

- Young children - fever, headache, tiredness, loss of appetite, about the same time as rash appears.
- Older children and adults - above signs and symptoms may appear one or two days before onset of rash.

## Rash

A rash may change in appearance rapidly. Sequence of rash: (1) flat red spot (2) elevated area containing clear fluid (3) crusted lesions. All stages of the rash may appear on any area of the body at one time. Rash most dense on trunk; less dense on arms, legs and face, including scalp and inside of nose and mouth.

## Cause

Varicella - zoster virus

## Incubation Period

From contact to the development of signs and symptoms: usually 14-16 days. May be as short as 10 days or as long as 21 days.

## Transmission

Person is infectious to others 1-2 days prior to eruption of rash and until ALL lesions are dry and crusted (approximately 5-6 days). Transmission directly from lesions or droplet, coughing, etc. or indirectly from clothing freshly soiled by discharge from vesicles or mucous membranes of infected person.

## Treatment

Itching may be minimized by soaking in water with baking soda or oatmeal. Physicians will sometimes prescribe antihistamines if a child is uncomfortable or irritable. Body temperature control may be necessary with some children. Do not give aspirin or Pepto Bismol.

## Complications

Uncommon. Reye's Syndrome has been associated with chickenpox. Immuno-compromised children are at higher risk for complications. They may experience prolonged eruption of lesions and high fever, and are contagious throughout this period.

## Immunization

Varicella Zoster vaccine (Varivax) is available through private pediatricians and the Sumter County Health Department. Immunization after exposure can lessen the severity of the disease. Clinical illness after re-exposure is rare, but may occur particularly in immuno-compromised persons.

## School Action

- Encourage parent/guardian to report cases to school office.
- The student is excluded from school until all lesions are dried to the crust stage.

*Contact the school RN if you have any questions.*

# FIFTH DISEASE (Erythema Infectiosum)



## Signs and Symptoms

First signs and symptoms are low grade fever, malaise, and a rash on the cheeks that gives a flushed appearance (sometimes referred to as a "slapped face" look). Within two or three days the "lacy look", a slightly raised rash, will spread to the arms, legs and trunk, usually not-appearing on the palms or soles. The duration of the illness is normally 5 to 10 days. The rash will sometimes recur for several weeks, particularly when the individual is exposed to sunlight or heat, exercise, or stress.

## Cause

Parvovirus B19

## Incubation Period

Time from contact to the development of signs and symptoms ranges from 4 to 20 days.

## Transmission

Transmitted primarily through contact with infected respiratory secretions. May be transmitted from mother to unborn child.

## Treatment

Parent/guardian should be urged to take children with the above symptoms to a physician to be diagnosed.

## Complications

Exposed pregnant women should notify their obstetrician.

## School Action

- For re-entry to school: If rash is present, a physician statement of diagnosis and "not contagious" must accompany the student.
- Student should not be in school if they have a fever.

# INFECTIOUS HEPATITIS (Hepatitis A)

## Signs and Symptoms

Fever, loss of appetite, vomiting, abdominal discomfort, indefinite feeling of being ill. Dark urine (coffee color) with light stools may be noticed. Yellow (jaundice) color of the skin and the whites of the eyes follow this in a few days. Severity increases with age. Children are more apt to have mild cases, frequently without jaundice.

## Cause

Hepatitis virus, Type A

## Incubation Period

Time from contact until the development of signs and symptoms 15-50 days, average of 28-30 days.

## Transmission

The virus is present in intestinal contents of infected persons and is passed in bowel movements. Where sanitation is poor, the virus can be transferred from sewage to drinking water, milk, vegetables, and seafood. Close person-to-person contact, the use of contaminated articles, and failing to wash hands thoroughly after handling contaminated objects can be sources of transmission. Person becomes infectious to others approximately two weeks before jaundice appears and remains infectious for about one week following evidence of jaundice.

## Treatment

A physician should see all cases of suspected hepatitis. Severity of cases can vary from illness of 1 to 2 weeks to an occasionally disabling disease of several months. Bed rest and careful observation are recommended until signs and symptoms have subsided.

## Complications

Severity tends to increase with age, but complete recovery is the rule.

## Immunization

There is a vaccine against Type A Hepatitis. Close contacts of confirmed hepatitis cases such as household members, persons exposed in day care centers or other group living situations, or persons known to be exposed to contaminated food or water should receive immune globulin as soon after exposure as possible. Immune globulin provides protection for about two months.

## Prevention

It is better to avoid this disease by good personal and household hygiene, sanitary disposal of body wastes, training children in good toilet habits and HANDWASHING.

# HEPATITIS B

## **Signs and Symptoms**

Gradually developing loss of appetite, abdominal discomfort, nausea, and vomiting. Sometimes joint pain and rash occurs. Often jaundice (yellowish tint of eyes and skin) appears later. Fever may or may not be present. Seriousness of illness varies.

## **Cause**

Hepatitis B virus (HBV)

## **Incubation Period**

Usually 45-180 days, average 60-90 days.

## **Transmission**

The virus is passed either directly from those who are already infected or indirectly from their body fluids. The virus can live on a surface for up to 30 days.

### ***The most common ways of getting the disease are:***

- Through needle stick or needle sharing.
- Through breaks in the skin by way of cuts or scrapes and exposure to blood or other body fluids.
- Through exposure to blood or other body fluids via the eyes or mouth.
- Through sexual contact.
- Through body piercing or tattooing.

## **Treatment**

Studies with antiviral drugs are in progress.

## **Complications**

Acute hepatic necrosis (liver tissue death), cirrhosis of the liver, liver cancer, chronic hepatitis, with or without symptoms, or death.

## **Immunization**

Hepatitis B vaccine is routine for infants and adolescents and is also indicated for persons with high risk of exposure to hepatitis. Immunoglobulin (IG or HBIG) is used to immunize known contacts of persons with hepatitis.

## **School Action**

- Utilize standard precautions in handling body fluids and items contaminated with body fluids.
- Emphasize good personal hygiene, particularly hand washing, to all students and staff members.

# IMPETIGO

## **Signs and Symptoms**

Lesions, yellow to red, weeping and crusted or pustular, especially around the nose, mouth and cheeks, or on the extremities. Early lesions are raised and contain fluid, later they contain pus, and finally become crusted.

## **Cause**

Staphylococcal and streptococcal organisms (bacteria)

## **Incubation Period**

Variable and indefinite. Commonly 4-10 days.

## **Transmission**

Impetigo is extremely contagious and is usually transmitted by contaminated hands, particularly where there are open draining areas. Easily transmitted by direct contact with infected persons. The hands are the most important instrument for transmitting infection. Good hand washing is vital.

## **Treatment**

Application of an antibiotic ointment, after soaking crusts in mild, soapy water. If infection is widespread, physicians will sometimes prescribe oral antibiotics.

## **Possible Complication**

Seldom scarring. Occasionally enlarged lymph nodes, which may indicate extensive infection or accompanying infection.

## **School Action**

- Emphasize good hygiene, particularly hand washing.
- Student with suspected impetigo should be excluded from school until
  - (a) a diagnosis in writing by a physician indicates a non-contagious skin ailment; or
  - (b) student is being treated and lesions are satisfactorily covered; or
  - (c) lesions are dry.

# **MEASLES**

## **RUBELLA, RED MEASLES, 10-DAY MEASLES**

### **Signs and Symptoms**

Fever, general malaise, conjunctivitis, runny nose, and a cough start three to four days before rash appears and continue for approximately 10 days.

### **Rash**

Rash appears first on face and neck and progresses down to involve trunk, arms and legs. On the fifth day after the rash appears, it begins to fade. Some scaling of skin on trunk may occur.

### **Cause**

Measles Rubella virus

### **Incubation Period**

Time from contact to development of disease is 7-18 days.

### **Transmission**

Airborne droplet or direct contact with nasal or throat secretions of infected persons. Child is infectious from first signs of illness until 5 or 6 days after rash appears.

### **Treatment**

Physician or health department should be contacted so diagnosis can be confirmed. Parent/guardian should seek assistance from physician in dealing with child's signs and symptoms.

**Complications** - Most serious: encephalitis. Others: deafness, otitis media, croup, pneumonia, diarrhea.

### **Immunization**

Available. Should be administered after 12 months of age and again between 4-6 years of age. Usually given with rubella and mump vaccines as MMR.

### **School Action**

- Emphasize good personal hygiene, particularly hand washing, to all students and staff members.



# INFECTIOUS MONONUCLEOSIS (MONO)

## **Signs and Symptoms**

Sore throat, malaise, swollen lymph nodes, and fever. In young children the disease is generally mild and more difficult to recognize. Most commonly recognized in high school and college students.

## **Cause**

Epstein-Barr virus

## **Incubation Period**

Time from contact to the development of signs and symptoms - 4 to 6 weeks.

## **Transmission**

Virus is transmitted from person to person through saliva either directly or indirectly from contact with eating utensils, drinking glasses or beverage containers.

## **Treatment**

In the early stages of mononucleosis, the primary management strategy is rest. Many physicians feel that physical exertion and stress may prolong the course of symptoms or precipitate relapse. This appears to be more of a problem in adolescents or young adults, many of whom complain of fatigue, with or without exertion, weeks or months after the onset of symptoms.

## **Complications**

Uncommon

## **Immunization**

None available

## **School Action**

- Students with infectious mononucleosis can re-enter school as soon as symptoms subside and they are feeling well.
- They should present a note from a physician stating limitations of physical activity when returning to school.
- Most young children do not require restriction of activities.

# MUMPS

## **Signs and Symptoms**

Fever, swelling and tenderness of one or more of the salivary glands.

## **Cause**

Virus Paramyxovirus

## **Incubation Period**

Time from contact until the development of signs and symptoms - 14-21 days.

## **Transmission**

By droplet (coughing, sneezing, etc.) and by direct contact with saliva of infected person.

Most infectious 24-48 hours before illness begins and can continue as long as 9 days after swelling is first observed.

## **Treatment**

Parent/guardian should seek assistance from physicians in dealing with signs and symptoms. Bed rest with observation of signs and symptoms is recommended.

## **Complications**

Hearing impairment (rare)

## **Immunization**

Available. Should be administered after 12 months of age. Usually given with measles and rubella vaccines as MMR.

## **School Action**

- Emphasize good personal hygiene, particularly hand washing, to all students and staff members.

## **PINK EYE (Acute Contagious Conjunctivitis)**

### **Signs and Symptoms**

Tearing, irritation, inflammation (redness) of the conjunctiva (lining of eyelids and covering of eye), swollen eyelids, crusting or discharge in one or both eyes.

### **Causes**

Acute bacterial, viral, or allergic

### **Incubation Period**

Bacterial is usually 24 to 72 hours.

### **Transmission**

Contact with discharges from eyes and upper respiratory tract of infected persons and from contaminated fingers, clothing, or other articles. Presumed contagious until symptoms have resolved.

### **Treatment**

If bacterial, antibiotic ointments or drops prescribed by a physician. If viral, will clear up with no specific antiviral treatment.

### **Complications**

Unusual, if treated. Eye pain, impaired vision, photophobia

### **School Action**

- Students with suspected pink eye should be excluded from school until
  - (a) a diagnosis in writing made by a physician indicates a non-contagious eye ailment; or
  - (b) signs and symptoms have disappeared (usually within 48 hours after treatment begins).
- Spread of infection is minimized by careful hand washing.

# PINWORMS

## **Signs and Symptom**

Perianal itching, disturbed sleep, irritability and local irritation with secondary infection as a result of scratching the skin. Worms usually come out of rectum at night and are most likely to be seen in anal region immediately after waking in the morning.

## **Cause**

Intestinal parasite (nematode)

## **Incubation Period**

Life cycle of parasite is 2 to 6 weeks. Signs and symptoms may not be evident for months.

## **Transmission**

Direct transfer of infective eggs by hands from anus to mouth of the same or another person and indirectly through clothing, bedding, food, or other articles contaminated with eggs of the parasite.

## **Treatment**

Suspected cases should be seen by a physician for confirmation and treatment. One dosage treatment is now available. Bed linens and underwear should be changed daily.

## **Complications**

Uncommon

## **Prevention**

Good hygiene, particularly hand-washing

## **School Action**

- Suspected cases should be referred to parent/guardian. If signs and symptoms persist or if the parent/guardian is unresponsive, refer to the school RN.
- Unless symptoms are severe, exclusion is not necessary.
- Stress good hygiene, particularly hand-washing and change of underwear daily.

# RINGWORM

## Signs and Symptoms

- Ringworm of the Scalp - Small raised area spreads leaving scaly patches of temporary baldness. Infected hairs become brittle and break off easily. Occasionally, raised and draining areas develop.
- Ringworm of the Body - Flat, spreading, ring-shaped lesions. Outer edge is usually reddish and may contain clear fluid or pus. In later stages, outer edges will become scaly or crusted and central area will appear like normal skin.
- Ringworm of the Foot - (Athlete's Foot) - Scaling or cracking of skin, especially between toes, and blisters containing watery fluid.

## Cause

Fungi

## Incubation Period

Scalp - 10 to 14 days

Body - 4 to 10 days

Foot – unknown

## Transmission

Direct or indirect contact with skin lesions of infected persons, contaminated articles and areas used by infected persons or with hair from infected persons and animals.

## Treatment

Usually topical antifungal to be applied as directed by label. For more serious cases, an oral antifungal medication may be prescribed.

## School Action

- A student with suspected ringworm of scalp or body should be excluded until
  - (a) a diagnosis in writing made by a physician indicates a non-contagious skin ailment; or
  - (b) the student is being treated and lesions are satisfactorily covered.
- All equipment and articles which an infected student comes in contact with should be disinfected when ringworm infestation has been identified.
- Personal hygiene should be stressed.

## **RUBELLA (German measles or Three Day Measles)**

### **Signs and Symptoms**

A young child may have no signs and symptoms until rash appears; then low grade fever and tiredness. Older children and adults usually have symptoms one to five days before rash, along with joint pain and swollen lymph nodes. Swollen lymph glands behind the ears and at top of the back of head appear 5-10 days before the rash.

### **Rash**

Rash is pink in color and begins on face and neck and progresses downward to trunk, arms and legs. Lesions are usually discrete and begin to fade within 48 hours.

### **Cause**

Rubella virus

### **Incubation Period**

Time from contact to development of signs and symptoms 14 - 21 days.

### **Transmission**

Transmission is by droplet spread (sneezing, coughing, etc.) or contact with infected persons. Period of infectiousness is from about one week prior to appearance of rash to about five days after it appears. Highly communicable.

### **Treatment**

Physician or public health department should be contacted so diagnosis can be confirmed. Possible contacts with pregnant women should be identified and their immunity status determined. Children with rubella should be treated according to symptoms.

### **Complications**

There are seldom complications in young children. Rubella can cause birth defects in the offspring of women who acquire the disease during pregnancy (especially if acquired during the first trimester).

### **Immunization**

Available. Should be administered after 12 months of age. (Usually given with measles and mumps vaccines as MMR.)

### **School Action**

- Emphasize good personal hygiene, particularly hand washing, to all students and staff members.

# SCABIES



## **Signs and Symptoms**

Small raised areas or tiny raised burrows containing mites and eggs. Lesions are most around finger webs, inside surface of wrists, elbows and folds under arms, and around waist. The rash may appear generalized and secondary infection may occur due to scratching. Itching is intense, particularly at night.

## **Cause**

Mite (*Sarcoptes scabiei*)

## **Incubation Period**

Two to six weeks after exposure until itching begins in persons with previous exposure. Persons previously infected may develop symptoms 1-4 days after re-exposure.

## **Transmission**

Transfer of mite by direct skin-to-skin contact and to a limited extent by contaminated garments and bed linens. Communicable until mites and eggs has been destroyed, ordinarily after one or two treatments a week apart.

## **Treatment**

Parents/guardian should contact their licensed health care provider regarding diagnosis and treatment. Treatment requires a prescription specifically for scabies.

## **School Action**

- A student with suspected scabies should be excluded from school until a diagnosis in writing by a physician indicates a non-contagious skin ailment; or upon completion of treatment. The student should be watched for re-infestation (appearance of new lesions or continued itching) for 7-10 days after initial treatment.
- Persons with skin to skin contact with infested persons may need to be treated. Launder or disinfect any articles used by infested persons.

# SCARLET FEVER (Streptococcal Diseases)



## **Signs and Symptoms**

Fever, headache, chills, general malaise, rash; sore throat and vomiting within 12 hours of onset of rash.

## **Rash**

Small, flat red dots. Red areas become white when pressure is applied. Rash develops most often on the neck, chest, axial, elbow, inner thighs, and groin. Scaling of skin on the feet and hands may occur.

## **Cause**

Group A beta hemolytic streptococci (Streptococci can be cultured from the throat).

## **Incubation Period**

Time from contact to the development of signs and symptoms: 1 - 3 days after close contact with an infected person. Incidence is highest among small children and during cold weather.

## **Transmission**

Usually by direct contact. By indirect contact through objects or hands (rare). Occasionally by food contaminated through coughing and sneezing. Treated cases usually do not transmit infection after 48 hours. Untreated cases can transmit infection as long as 21 days.

## **Treatment**

A physician should see **all** suspected cases. Administration of an antibiotic is the usual treatment of choice.

## **Possible Complications**

Otitis media (ear infection), abscesses extending around the tonsils, sinusitis; in extreme cases, heart and kidney problems.

## **Immunization**

None

## **School Action**

- A student with Scarlet Fever may be readmitted to school 1-2 days after treatment begins, with a note from the doctor.